Stakeholder Meeting Questions - OPSB 2020 Rule Review

Written Testimony for Stakeholder Meeting – March 11, 2020

Submitted by:
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(Huron County – Norwich Township – In the footprint of the Emerson Creek Wind Project)

The Ohio Power Siting Board (OPSB) has a framework of statutes and rules that currently provide for its application review process. In connection with its review of the operating rules in Ohio Administrative Code Chapter 4906, the OPSB seeks feedback on the current process framework, as well as recommendations as to modifying or updating the process.

The OPSB seeks comments regarding three main areas: (1) public awareness and participation in the evaluation of projects; (2) the application review and adjudication process; and, (3) certificate monitoring and enforcement. In combination with general input regarding these issues, the OPSB seeks comments regarding:

1. How can the Board better engage the public?
    a. How can the process provide meaningful participation in project reviews?
        i. Prior to the filing of applications by the applicant or the Board?
        ii. During the period between the application filing and the finding of completeness?
        iii. During the period of Staff review and development of its report (within the statutory deadline of 15 days prior to public hearing - R.C. 4906.07)?
        iv. What methods of participation are most useful to the public (i.e. public testimony, verbal comments on the record, written comments, or other forms of participation)?

Answer: The lack of awareness by the general public of the extent of these projects is one of the largest problems with the current system. My wife and I have lived in the same home in Huron County since 1997 and were not aware of the Emerson Creek Project until we attended a public meeting, which was not sponsored by the OPSB or the developer, on May 31, 2018, held at the Attica Fairgrounds.

The first time we received any formal information from either the OPSB or the developer was when we received a letter by 1st Class mail informing us of the first Informational Meeting at the Bronson Conversation Club in early November 2018 . This meeting was the first time the OPSB required the developer to have any contact with us, and the many local residents who are not leaseholders for the project.

*After we attended the meeting on May 31, 2018, I made a personal visit to the APEX office in downtown Bellevue, attempting to learn more about the project. I spoke to an APEX employee about the questions I had, and when I asked how it was possible I had not been informed of this project, I was told that the developer had no need to contact me as "**I didn't own enough land for them to need me**".*

*In the ensuing weeks/months, I learned more and more about the details of the project. I learned that the developer, or their predecessor, had been in my area for approximately 10 years, contacting farmers who they **did need**, signing them up as leaseholders. These leases contained clauses which prohibited those signing them from divulging any details about the lease. In short, the developer spent many years acquiring the leases necessary for the project before the application was even filed with the OPSB.*

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I was personally contacted by leaseholders who had signed leases many years prior, and developed "buyer's remorse". I was informed the sales pitch used by the developer's personnel during these contacts described a project which was remarkably different from the project in the current application. This was information I was being personally told by local folks who were leaseholders and who now found themselves stuck in a lease they seemed to feel they couldn't remove themselves from. As I had conversations with other local residents I found most of us were "in the dark" about the project.

The extent of area residents who were not fully informed of the scope and effects of this project is reflected in a survey done by a local resident of the public records at the Huron County Auditor's office and Board of Elections in February 2019. There are 1,631 voting households in the five townships in Huron County contained within the Emerson Creek Project. Of these households, 111 have leases or under 7% of the voting households. 43 of the 111 leaseholders own property within the footprint but live outside the project area, and 18 of the 111 leaseholders have physical residences which are outside of Huron County. Some of these actually live outside the State of Ohio.

After doing our research on the pros and cons of the project a local group of people who felt the project proposed more negative aspects than positive, began to collect signatures on petitions indicating our opposition to the project. When we provided them to the OPSB and local elected officials, we were repeatedly told by the local officials that they had heard no opposition to the project. These comments from local elected officials came when the developer applied for a PILOT for the project. Public meetings in Seneca, Erie and Huron County had large turnout, and most of those in attendance were overwhelmingly opposed to the project. The uninformed majority had learned the details of the proposed project, weighed the pros and cons, and were vocal about their opposition.

The local opposition to the project(s) resulted in:

1. *The Sandusky and Seneca County Commissioners rescinding the previously granted AEZ for their county and passage of a resolution opposing any further PILOT arrangements for any further projects not already approved by the OPSB.*
2. *The County Commissioners in Erie County denied the PILOT request for Emerson Creek. The Huron County Commissioners denied a PILOT for Emerson Creek, and in early 2019 reversed a 2018 Resolution which supported the Emerson Creek project and the associated PILOT.*

The wind developer had publicly stated at meetings I attended, and repeated in local newspapers articles, that with no PILOT there would be no project. They continue to state today that the local official's vote on approving or denying a PILOT, is part of the local control they must endure as part of the "vigorous" review they have to go through to have a project approved by the OPSB. The outpouring from local residents who voiced opposition to this project at the many public meetings held on the PILOT proposal is seen as the primary reason our local elected officials denied the PILOT request of the developer. Contrary to what the developer publicly claimed, the denial of the PILOT did nothing to stop the project. All of these actions came in early 2019, nine years after the developer started signing up leaseholders, and within 6 months of the first OPSB mandated Public Information meeting in November 2018. Is it any wonder that local residents who are not leaseholders, who will personally financially gain from the project, are upset with the process?

I have been actively involved in fact-finding for three local projects in my immediate area; Emerson Creek Wind, Republic Wind, and Seneca Wind. I am not opposed to wind and solar energy projects, when they are erected in areas where the local people want them. I spent nearly 30 years of my life as a law enforcement officer, gathering evidence and drawing conclusions based on the evidence.

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The Seneca Wind project application has been withdrawn twice within the past year. I have read the Staff Reports for all three local projects. I have attended Public and Adjudicatory Hearings, attended the Blade Throw Workshop held at the PUCO in April 2019, presented written testimony regarding the blade throw workshop prior to implementation of revised rules, and have testified in committee hearings of the Ohio House of Representatives and Ohio Senate on HB 6, HB 401, and SB 234. I have listened to both sides of the issue, and have done my best to remain objective.

I am sorry to report that I currently believe no one, not our elected representatives nor the appointed representatives which comprise the Ohio Power Siting Board, have the health and safety of the citizens of Ohio as their primary focus. We have presented credible evidence of harmful effects to our health, safety, environment, and our property values. Evidence abounds about experiences of other states and countries regarding the negative effects of industrial wind turbines and the items these states and countries have implemented to end these negative effects. Our evidence is from credible, credentialed experts and should carry as much weight as that provided by the developers, who we all know have a vested interest in making money. That is why they are developers, to make money.

The Adjudicatory Hearing for Republic Wind raised serious questions about the flawed and biased procedures used by the wind developer while conducting the currently mandated sound studies, bird census, financial benefits overview, and nearly every item which is part of the current permitting process.

Since projects of this nature are not within the purview of local zoning, and the entire permitting process is controlled at the state level, the OPSB has a duty to act as the local zoning board and look out for the welfare and safety of the citizens. Currently there is no local control, as no local zoning board has any authority over the project. There is no local vote. There are no local people, familiar with local issues that have any deciding vote on projects which will change the landscape of where they and their families live for generations. We heard locally elected officials lament over and over during our discussions with them that there was nothing they could do to approve or deny the project. That authority rests solely with the seven appointed members of the Ohio Power Siting Board.

We deserve to be heard, and more importantly listened to. It appears to me after reviewing the applications from the developer, and the Staff Reports connected to these applications, that the Ohio Power Siting Board relies too heavily on information provided by the wind developers. The Staff Reports I have viewed, for the Seneca Wind, Republic Wind, and Emerson Creek Wind projects have many references to "recommendations" but few orders requiring the wind developer do any particular item which the Staff recommends. Possibly that is because the Staff doesn't have that authority, and conditions of approval are solely within the bailiwick of the seven voting members of the OPSB.

The decision of the Board for the Republic Wind project has yet to be made. The Administrative Law Judge's report to the Board has yet to be published. If the Administrative Law Judges put any weight on the Staff Report's recommendations, I see little, if any, real consideration reflected in the written report for the true negative impacts to the health and safety of local residents and the environment of the local area. There seems to be little or no oversight, and the developer is allowed to self-report information to the board. This, I maintain, is akin to allowing the fox guard the henhouse. The OPSB can put as many conditions on an application approval that it wants, but without independent monitoring by someone other than the wind developer, how does the OPSB expect to verify compliance with those conditions?

I would recommend the OPSB adopt rules, or advocate for a change in the Ohio Law, requiring the OPSB and wind/solar developers hold public informational meetings at the very beginning of a project, before the first lease is signed. The OPSB should be the lead agency on these public meetings, and the developer should be required to

attend. These public information meetings should not be showcases for the wind developers, allowing them extoll the sales pitches of all the positive aspects of wind energy they continue to regurgitate. There should be true transparency on these issues. Both sides should be allowed to weigh-in. This will allow all local people be involved in the decision process and have input. The current process didn't require the current developer of the Emerson Creek project to inform the general public about the project until November 2018. This notification was for a project they had been actively pursuing since at least 2010. They already had their leases in hand before they told anyone who wasn't a leaseholder about the project.

b. How can Staff become better informed as to local knowledge and project concerns prior to completing its formal report?

Answer: See above.

c. Current rules require 4 public notices regarding a proposed project: (1) pre-application informational meeting; (2) the determination of application completeness; (3) the first public notice 15 days after the application is accepted; and, (4) the second public notice 7-21 days prior to public hearing. What additional public notices might be helpful during the evaluation of a project?

Answer: See above.

d. How else should the Board modify or update the current processes, including the public information meeting, public hearing, and evidentiary hearing?

Answer: The Public Information meetings I have attended, and I have attended four such meetings for two separate wind projects and a transmission line connected to one of the projects, have been showcases for the wind companies.

At three of the meetings, there were only displays and personnel from the developer, who were presenting information accentuating only the positive information from the wind company's perspective. OPSB were on hand to answer questions about the OPSB.

At one of the Public Information meetings, the "re-do" meeting ordered by the OPSB for Emerson Creek held at the Bellevue VFW on April 3, 2019, local citizens were permitted by the OPSB to set up an informational table. The developer estimated "over" 200 people attended this meeting, as reported to the OPSB by letter from the developer. 134 local people signed petitions of opposition to the project at this meeting. I would highly recommend this format for all future Public Information meetings, and as alluded to in the answer to question 1a, I would schedule this meeting much earlier in the application process than currently required.

The Public Hearing and Adjudicatory Hearings I have attended seem to meet the necessary requirements for hearings of this type.

e. Staff currently consults with and engages subject matter experts from state and federal agencies to seek and provide information while reviewing projects for possible approval. Can this process be improved? And if so, what recommendations do you have?

Answer: All subject matter experts should be non-partial. Staff should never rely on information from subject matter experts arranged for by the developer. Evidence elicited in cross-examination of these "experts" at the Adjudicatory Hearing for Republic Wind showed clearly that subject matter experts used by the wind developer

did not seem to meet the non-partial smell test. Any subject matter experts utilized by the Board need to be independent and non-partial.

f. How can the Staff improve the quality and timeliness of its review of transmission projects through coordination with regional planning authorities such as PJM Interconnect LLC?

Answer: Prior to accepting applications for any electric generation or transmission projects, I would think coordination with PJM or other companies connected to the grid would be of paramount importance. If there is no need for the generation or transmission line there is no need for the project. Any transmission line project application should not be considered in any way until after the generation application is approved. I do not know what review is conducted now with these entities, and cannot comment on improving quality or timeliness.

2. What modifications should occur as to application processing?

a. With regard to the findings that the Board must make pursuant to R.C. 4906.10, to what extent can any of the required determinations be deferred after a certificate is authorized to accommodate the receipt of information for which the provision may not be feasible until after the certificate is authorized?

Answer: I see nothing listed in current law, ORC 4906.10, which would require deferment. All of the provisions of the law seem to be able to be decided before the application is approved.

b. If any such determination is so deferred, should the Board consider unbundling a certificate to construct and operate, and permit construction to move forward while the operating authority is deferred until such time and any open items are addressed? Should certain phases or components of the application be: (1) approved only upon submission of "final designs;" or, (2) approved pursuant to more fully developed project information if it is impractical or not feasible to provide final detailed studies/designs or plans? What should the Board consider when making this determination of feasibility?

i. Landscape/lighting plans?
ii. Solar glare studies?
iii. Cultural resource studies?
iv. Vegetation management and plant/animal impact action plans?
v. Final decommissioning plans?
vi. Geotechnical and other testing results?
vii. Adaptive engineering plans (i.e. turbine modifications)?
viii. Impacts to agricultural land?
ix. Land use authority?
x. Transparent safety information, including access to non-proprietary safety manual information?
xi. Interconnection information?
xii. Land lease/use arrangements
xiii. Other

Answer: No construction should be permitted and no unbundling should be allowed until every one of the items listed above has been vetted by the Board and approved. This seems to tie-in with the question below. The application should be so thoroughly vetted and dissected by the Board and Staff that there are no unanswered questions. When the developer has met all of these standards, then the application can be approved and construction can commence.

c. What level of design and engineering drawings should be provided in the application? Should the final design be provided?

Answer: Local zoning regulations require developers of projects submit detailed final drawings of what they plan to build. I see no reason why developers of wind/solar projects, whose local zoning board is the OPSB, not be required to do the same. One of the recurring problems observed with the three wind projects I have been following in my area is that the wind developer seems to be constantly changing plans, "moving the goalposts" if you were, so those who are attempting to understand the project never seem to be able to get all the facts. Just when you think you have a grasp on the project, the developer changes the facts.

d. To the extent the applicant submits supportive studies, should the studies be subject to a trustworthiness standard such as the evidentiary standard applicable to expert opinions? If so, what standard? If not, why not?

Answer: Refer to Rule 702 (attached)

a. Does the application need to be expanded, including the required information in the filing?

Answer: I'm not aware of anything else applicable. It is more important that you require accuracy in what is in the application and adopt a more critical attitude when reviewing information submitted than in coming up with more information to plow through.

b. Should multi-stage projects be required to be filed as one combined application (i.e., transmission line, substation, generating facility)? Why or why not?

Answer: No

c. 1. For multi-stage projects involving a generating plant and a dedicated transmission line, how should "need" for the transmission line be determined?

Answer: The Generation Facility, The Substation, and the Transmission lines when combined in one application make project review complicated. The required degree of rigor may change based upon conceptual design. The various applications should be cross-referenced in the related applications with any pertinent explanations as to the association.

The "need" for the transmission line should be linked to the "need" of the power.

d. What criteria should determine the difference between a "modification" versus an "amendment?"

Answer: A "modification" or an "amendment" should both be considered a "change" from the original project application. Both should require OPSB review and approval , and notification of the public. All health and safety considerations for the public, such as property line setbacks, minimum distances, and impact on water supply and quality should be considered and approved by the Board for every "modification" or "amendment", whatever you decide to call it.

e. What criteria should determine if a proposed change in the facility would result in any material increase in environmental impact or a substantial change in location for purposes of R.C. 4906.07?

Answer: Any proposed change should follow the guidelines of the answer to question "d" above.

f. Where provision for decommissioning is appropriate, should the applicant be required to demonstrate project financial viability/adequate cash flow sufficient to accommodate estimated and actual decommissioning expense?

Answer: The applicant should be required to place the amount of money needed to cover decommissioning costs, which include removal of the parts of the project, and returning the area to the state it was in before construction and disposal of all portions of the project. This amount, adjusted for inflation over the life of the project, should be deposited in an escrow account maintained by the State of Ohio and dedicated to this purpose by individual project. There have been too many examples of projects being constructed and then sold by the developer, sometimes to companies not domiciled in the United States. The taxpayer should never be on the hook for reclaiming the land associated with these projects. It is bad enough that under current law, we are helping to pay for the construction of these inefficient machines with tax dollars doled out as Production Tax Credits.

g. Should an applicant be required to submit manufacture safety manuals and other materials and to what extent should such information be available to the public?

Answer: Absolutely. Safety manuals should never be "proprietary". Public safety demands that risks associated with these machines are well-known and circulated widely.

h. Should the applicant be required to address issues and concerns raised in public comments?

Answer: Yes. One of the more frustrating things evident at public hearings during the PILOT discussions for Emerson Creek was the dismissive attitude of the wind company toward legitimate concerns raised by the public.

Since the OPSB has taken on the role of zoning board in place of local authority, the attitude of the OPSB regarding these projects should be to put the burden of proof on the developer to show how the project won't harm the health, safety and environment of the local community, rather than forcing members of the local community to challenge assertions made by the wind developer at every turn.

3. How should the Board monitor and enforce the terms of its certificates?

Answer: You should develop teeth in your enforcement of terms you impose. Large fines and immediate shutdown of facilities found in violation of your terms is in order. Facilities should not be permitted to re-start operation until the facility is in compliance with your terms. Of course, this will require you have Staff

who is inspecting the facilities on a regular basis? If you permit the wind companies to police themselves, I fear you and the citizens you have a duty to protect will be the victims.

a. How should compliance with certificated conditions be documented both with regard to the determination of when construction may commence and through the life of the certificate/facility?

Answer: However you decide to do it, the developer should not be permitted to self-report. I would recommend Staff be added to visit facilities under construction and currently operating to maintain compliance. These visits should be unannounced and random. If health departments can visit restaurants, industrial wind facilities need inspected too.

b. To the extent that permits, licenses or other consents must be obtained from federal, state or local authorities before the project can move forward, how should the applicant document satisfaction of these requirements and update the Staff and Board as a result of changes in circumstances that may affect the authority provided by such permits, licenses or other consents.

Answer: Again, I caution you not to allow the developer to maintain control of notification. Permits issued by another government agency should be directly reported to the OPSB by the agency granting the permit. It is up to you to monitor the project.

c. More generally, what post-construction monitoring and enforcement procedures should apply, including during the operation and decommissioning phase?

Answer: See answer to question 3 above.

d. What additional procedures should apply, if any, to certificate transfers beyond the transferee agreeing to comply with the terms, conditions, and modifications imposed upon the certificate by the Board? What enforcement mechanisms should exist to ensure compliance with certificated conditions, board orders, rules, or laws (i.e. suspension of certificate or operating authority in the event of a violation of 4906.98)?

Answer: See answer to question 3 above.

e. By what process should decommissioning costs be revisited and evaluated for purposes of establishing the bond level?

All decommissioning costs should be placed in escrow at the time of application approval. See answer to question 2 f above.

Thank you for inviting me to provide input today.

Walt Poffenbaugh

Ohio Rules of Evidence: Rule 702. Testimony by Expert Witnesses

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

(a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;

(b) the testimony is based on sufficient facts or data;

(c) the testimony is the product of reliable principles and methods; and

(d) the expert has reliably applied the principles and methods to the facts of the case.

NOTES

(Pub. L. 93–595, §1, Jan. 2, 1975, 88 Stat. 1937; Apr. 17, 2000, eff. Dec. 1, 2000; Apr. 26, 2011, eff. Dec. 1, 2011.)

NOTES OF ADVISORY COMMITTEE ON PROPOSED RULES

An intelligent evaluation of facts is often difficult or impossible without the application of some scientific, technical, or other specialized knowledge. The most common source of this knowledge is the expert witness, although there are other techniques for supplying it.

Most of the literature assumes that experts testify only in the form of opinions. The assumption is logically unfounded. The rule accordingly recognizes that an expert on the stand may give a dissertation or exposition of scientific or other principles relevant to the case, leaving the trier of fact to apply them to the facts. Since much of the criticism of expert testimony has centered upon the hypothetical question, it seems wise to recognize that opinions are not indispensable and to encourage the use of expert testimony in non-opinion form when counsel believes the trier can itself draw the requisite inference. The use of opinions is not abolished by the rule, however. It will continue to be permissible for the experts to take the further step of suggesting the inference which should be drawn from applying the specialized knowledge to the facts. See Rules 703 to 705.

Whether the situation is a proper one for the use of expert testimony is to be determined on the basis of assisting the trier. "There is no more certain test for determining when experts may be used than the common sense inquiry whether the untrained layman would be qualified to determine intelligently and to the best possible degree the particular issue without enlightenment from those having a specialized understanding of the subject involved in the dispute." Ladd, Expert Testimony, 5 Vand.L.Rev. 414, 418 (1952). When opinions are excluded, it is because they are unhelpful and therefore superfluous and a waste of time. 7 Wigmore §1918.

The rule is broadly phrased. The fields of knowledge which may be drawn upon are not limited merely to the "scientific" and "technical" but extend to all "specialized" knowledge. Similarly, the expert is viewed, not in a narrow sense, but as a person qualified by "knowledge, skill, experience, training or education." Thus within the scope of the rule are not only experts in the strictest sense of the word, e.g., physicians, physicists, and architects, but also the large group sometimes called "skilled" witnesses, such as bankers or landowners testifying to land values.

COMMITTEE NOTES ON RULES—2000 AMENDMENT

Rule 702 has been amended in response to *Daubert v. Merrell Dow Pharmaceuticals, Inc*., 509 U.S. 579 (1993), and to the many cases applying *Daubert*, including *Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167 (1999). In *Daubert* the Court charged trial judges with the responsibility of acting as gatekeepers to exclude unreliable expert testimony, and the Court in *Kumho* clarified that this gatekeeper function applies to all expert testimony, not just testimony based in

science. *See also Kumho*, 119 S.Ct. at 1178 (citing the Committee Note to the proposed amendment to Rule 702, which had been released for public comment before the date of the *Kumho* decision). The amendment affirms the trial court's role as gatekeeper and provides some general standards that the trial court must use to assess the reliability and helpfulness of proffered expert testimony. Consistently with *Kumho*, the Rule as amended provides that all types of expert testimony present questions of admissibility for the trial court in deciding whether the evidence is reliable and helpful. Consequently, the admissibility of all expert testimony is governed by the principles of Rule 104(a). Under that Rule, the proponent has the burden of establishing that the pertinent admissibility requirements are met by a preponderance of the evidence. *See Bourjaily v. United States*, 483 U.S. 171 (1987).

Daubert set forth a non-exclusive checklist for trial courts to use in assessing the reliability of scientific expert testimony. The specific factors explicated by the *Daubert* Court are (1) whether the expert's technique or theory can be or has been tested—that is, whether the expert's theory can be challenged in some objective sense, or whether it is instead simply a subjective, conclusory approach that cannot reasonably be assessed for reliability; (2) whether the technique or theory has been subject to peer review and publication; (3) the known or potential rate of error of the technique or theory when applied; (4) the existence and maintenance of standards and controls; and (5) whether the technique or theory has been generally accepted in the scientific community. The Court in *Kumho* held that these factors might also be applicable in assessing the reliability of nonscientific expert testimony, depending upon "the particular circumstances of the particular case at issue." 119 S.Ct. at 1175.

No attempt has been made to "codify" these specific factors. *Daubert* itself emphasized that the factors were neither exclusive nor dispositive. Other cases have recognized that not all of the specific *Daubert* factors can apply to every type of expert testimony. In addition to *Kumho*, 119 S.Ct. at 1175, *see Tyus v. Urban Search Management*, 102 F.3d 256 (7th Cir. 1996) (noting that the factors mentioned by the Court in *Daubert* do not neatly apply to expert testimony from a sociologist). *See also Kannankeril v. Terminix Int'l, Inc.*, 128 F.3d 802, 809 (3d Cir. 1997) (holding that lack of peer review or publication was not dispositive where the expert's opinion was supported by "widely accepted scientific knowledge"). The standards set forth in the amendment are broad enough to require consideration of any or all of the specific *Daubert* factors where appropriate.

Courts both before and after *Daubert* have found other factors relevant in determining whether expert testimony is sufficiently reliable to be considered by the trier of fact. These factors include:

(1) Whether experts are "proposing to testify about matters growing naturally and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for purposes of testifying." *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 43 F.3d 1311, 1317 (9th Cir. 1995).

(2) Whether the expert has unjustifiably extrapolated from an accepted premise to an unfounded conclusion. *See General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997) (noting that in some cases a trial court "may conclude that there is simply too great an analytical gap between the data and the opinion proffered").

(3) Whether the expert has adequately accounted for obvious alternative explanations. *See Claar v. Burlington N.R.R.*, 29 F.3d 499 (9th Cir. 1994) (testimony excluded where the expert failed to consider other obvious causes for the plaintiff's condition). *Compare Ambrosini v. Labarraque*, 101 F.3d 129 (D.C.Cir. 1996) (the possibility of some uneliminated causes presents a question of weight, so long as the most obvious causes have been considered and reasonably ruled out by the expert).

(4) Whether the expert "is being as careful as he would be in his regular professional work outside his paid litigation consulting." *Sheehan v. Daily Racing Form, Inc.*, 104 F.3d 940, 942 (7th Cir. 1997). *See Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1176 (1999) (*Daubert* requires the trial court to assure itself that the expert "employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field").

(5) Whether the field of expertise claimed by the expert is known to reach reliable results for the type of opinion the expert would give. *See Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1175 (1999) (*Daubert's* general acceptance factor

does not "help show that an expert's testimony is reliable where the discipline itself lacks reliability, as, for example, do theories grounded in any so-called generally accepted principles of astrology or necromancy."); *Moore v. Ashland Chemical, Inc*., 151 F.3d 269 (5th Cir. 1998) (en banc) (clinical doctor was properly precluded from testifying to the toxicological cause of the plaintiff's respiratory problem, where the opinion was not sufficiently grounded in scientific methodology); *Sterling v. Velsicol Chem. Corp*., 855 F.2d 1188 (6th Cir. 1988) (rejecting testimony based on "clinical ecology" as unfounded and unreliable).

All of these factors remain relevant to the determination of the reliability of expert testimony under the Rule as amended. Other factors may also be relevant. *See Kumho*, 119 S.Ct. 1167, 1176 ("[W]e conclude that the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable."). Yet no single factor is necessarily dispositive of the reliability of a particular expert's testimony. *See, e.g., Heller v. Shaw Industries, Inc*., 167 F.3d 146, 155 (3d Cir. 1999) ("not only must each stage of the expert's testimony be reliable, but each stage must be evaluated practically and flexibly without bright-line exclusionary (or inclusionary) rules."); *Daubert v. Merrell Dow Pharmaceuticals, Inc*., 43 F.3d 1311, 1317, n.5 (9th Cir. 1995) (noting that some expert disciplines "have the courtroom as a principal theatre of operations" and as to these disciplines "the fact that the expert has developed an expertise principally for purposes of litigation will obviously not be a substantial consideration.").

A review of the caselaw after *Daubert* shows that the rejection of expert testimony is the exception rather than the rule. *Daubert* did not work a "seachange over federal evidence law," and "the trial court's role as gatekeeper is not intended to serve as a replacement for the adversary system." *United States v. 14.38 Acres of Land Situated in Leflore County, Mississippi*, 80 F.3d 1074, 1078 (5th Cir. 1996). As the Court in *Daubert* stated: "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." 509 U.S. at 595. Likewise, this amendment is not intended to provide an excuse for an automatic challenge to the testimony of every expert. *See Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1176 (1999) (noting that the trial judge has the discretion "both to avoid unnecessary 'reliability' proceedings in ordinary cases where the reliability of an expert's methods is properly taken for granted, and to require appropriate proceedings in the less usual or more complex cases where cause for questioning the expert's reliability arises.").

When a trial court, applying this amendment, rules that an expert's testimony is reliable, this does not necessarily mean that contradictory expert testimony is unreliable. The amendment is broad enough to permit testimony that is the product of competing principles or methods in the same field of expertise. *See, e.g., Heller v. Shaw Industries, Inc*., 167 F.3d 146, 160 (3d Cir. 1999) (expert testimony cannot be excluded simply because the expert uses one test rather than another, when both tests are accepted in the field and both reach reliable results). As the court stated in *In re Paoli R.R. Yard PCB Litigation*, 35 F.3d 717, 744 (3d Cir. 1994), proponents "do not have to demonstrate to the judge by a preponderance of the evidence that the assessments of their experts are correct, they only have to demonstrate by a preponderance of evidence that their opinions are reliable. . . . The evidentiary requirement of reliability is lower than the merits standard of correctness." *See also Daubert v. Merrell Dow Pharmaceuticals, Inc*., 43 F.3d 1311, 1318 (9th Cir. 1995) (scientific experts might be permitted to testify if they could show that the methods they used were also employed by "a recognized minority of scientists in their field."); *Ruiz-Troche v. Pepsi Cola*, 161 F.3d 77, 85 (1st Cir. 1998) (" *Daubert* neither requires nor empowers trial courts to determine which of several competing scientific theories has the best provenance.").

The Court in *Daubert* declared that the "focus, of course, must be solely on principles and methodology, not on the conclusions they generate." 509 U.S. at 595. Yet as the Court later recognized, "conclusions and methodology are not entirely distinct from one another." *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). Under the amendment, as under *Daubert*, when an expert purports to apply principles and methods in accordance with professional standards, and yet reaches a conclusion that other experts in the field would not reach, the trial court may fairly suspect that the principles and methods have not been faithfully applied. *See Lust v. Merrell Dow Pharmaceuticals, Inc*., 89 F.3d 594, 598 (9th Cir. 1996). The amendment specifically provides that the trial court must scrutinize not only the principles and

methods used by the expert, but also whether those principles and methods have been properly applied to the facts of the case. As the court noted in *In re Paoli R.R. Yard PCB Litig*., 35 F.3d 717, 745 (3d Cir. 1994), " *any* step that renders the analysis unreliable . . . renders the expert's testimony inadmissible. *This is true whether the step completely changes a reliable methodology or merely misapplies that methodology*."

If the expert purports to apply principles and methods to the facts of the case, it is important that this application be conducted reliably. Yet it might also be important in some cases for an expert to educate the factfinder about general principles, without ever attempting to apply these principles to the specific facts of the case. For example, experts might instruct the factfinder on the principles of thermodynamics, or bloodclotting, or on how financial markets respond to corporate reports, without ever knowing about or trying to tie their testimony into the facts of the case. The amendment does not alter the venerable practice of using expert testimony to educate the factfinder on general principles. For this kind of generalized testimony, Rule 702 simply requires that: (1) the expert be qualified; (2) the testimony address a subject matter on which the factfinder can be assisted by an expert; (3) the testimony be reliable; and (4) the testimony "fit" the facts of the case.

As stated earlier, the amendment does not distinguish between scientific and other forms of expert testimony. The trial court's gatekeeping function applies to testimony by any expert. *See Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1171 (1999) ("We conclude that *Daubert's* general holding—setting forth the trial judge's general 'gatekeeping' obligation—applies not only to testimony based on 'scientific' knowledge, but also to testimony based on 'technical' and 'other specialized' knowledge."). While the relevant factors for determining reliability will vary from expertise to expertise, the amendment rejects the premise that an expert's testimony should be treated more permissively simply because it is outside the realm of science. An opinion from an expert who is not a scientist should receive the same degree of scrutiny for reliability as an opinion from an expert who purports to be a scientist. *See Watkins v. Telsmith, Inc*., 121 F.3d 984, 991 (5th Cir. 1997) ("[I]t seems exactly backwards that experts who purport to rely on general engineering principles and practical experience might escape screening by the district court simply by stating that their conclusions were not reached by any particular method or technique."). Some types of expert testimony will be more objectively verifiable, and subject to the expectations of falsifiability, peer review, and publication, than others. Some types of expert testimony will not rely on anything like a scientific method, and so will have to be evaluated by reference to other standard principles attendant to the particular area of expertise. The trial judge in all cases of proffered expert testimony must find that it is properly grounded, well-reasoned, and not speculative before it can be admitted. The expert's testimony must be grounded in an accepted body of learning or experience in the expert's field, and the expert must explain how the conclusion is so grounded. *See, e.g*., American College of Trial Lawyers, *Standards and Procedures for Determining the Admissibility of Expert Testimony after Daubert*, 157 F.R.D. 571, 579 (1994) ("[W]hether the testimony concerns economic principles, accounting standards, property valuation or other non-scientific subjects, it should be evaluated by reference to the 'knowledge and experience' of that particular field.").

The amendment requires that the testimony must be the product of reliable principles and methods that are reliably applied to the facts of the case. While the terms "principles" and "methods" may convey a certain impression when applied to scientific knowledge, they remain relevant when applied to testimony based on technical or other specialized knowledge. For example, when a law enforcement agent testifies regarding the use of code words in a drug transaction, the principle used by the agent is that participants in such transactions regularly use code words to conceal the nature of their activities. The method used by the agent is the application of extensive experience to analyze the meaning of the conversations. So long as the principles and methods are reliable and applied reliably to the facts of the case, this type of testimony should be admitted.

Nothing in this amendment is intended to suggest that experience alone—or experience in conjunction with other knowledge, skill, training or education—may not provide a sufficient foundation for expert testimony. To the contrary, the text of Rule 702 expressly contemplates that an expert may be qualified on the basis of experience. In certain fields, experience is the predominant, if not sole, basis for a great deal of reliable expert testimony. *See, e.g., United States v. Jones*, 107 F.3d 1147 (6th Cir. 1997) (no abuse of discretion in admitting the testimony of a handwriting examiner who

had years of practical experience and extensive training, and who explained his methodology in detail); *Tassin v. Sears Roebuck*, 946 F.Supp. 1241, 1248 (M.D.La. 1996) (design engineer's testimony can be admissible when the expert's opinions "are based on facts, a reasonable investigation, and traditional technical/mechanical expertise, and he provides a reasonable link between the information and procedures he uses and the conclusions he reaches"). *See also Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1178 (1999) (stating that "no one denies that an expert might draw a conclusion from a set of observations based on extensive and specialized experience.").

If the witness is relying solely or primarily on experience, then the witness must explain how that experience leads to the conclusion reached, why that experience is a sufficient basis for the opinion, and how that experience is reliably applied to the facts. The trial court's gatekeeping function requires more than simply "taking the expert's word for it." *See Daubert v. Merrell Dow Pharmaceuticals, Inc*., 43 F.3d 1311, 1319 (9th Cir. 1995) ("We've been presented with only the experts' qualifications, their conclusions and their assurances of reliability. Under *Daubert*, that's not enough."). The more subjective and controversial the expert's inquiry, the more likely the testimony should be excluded as unreliable. *See O'Conner v. Commonwealth Edison Co*., 13 F.3d 1090 (7th Cir. 1994) (expert testimony based on a completely subjective methodology held properly excluded). *See also Kumho Tire Co. v. Carmichael*, 119 S.Ct. 1167, 1176 (1999) ("[I]t will at times be useful to ask even of a witness whose expertise is based purely on experience, say, a perfume tester able to distinguish among 140 odors at a sniff, whether his preparation is of a kind that others in the field would recognize as acceptable.").

Subpart (1) of Rule 702 calls for a quantitative rather than qualitative analysis. The amendment requires that expert testimony be based on sufficient underlying "facts or data." The term "data" is intended to encompass the reliable opinions of other experts. See the original Advisory Committee Note to Rule 703. The language "facts or data" is broad enough to allow an expert to rely on hypothetical facts that are supported by the evidence. *Id.*

When facts are in dispute, experts sometimes reach different conclusions based on competing versions of the facts. The emphasis in the amendment on "sufficient facts or data" is not intended to authorize a trial court to exclude an expert's testimony on the ground that the court believes one version of the facts and not the other.

There has been some confusion over the relationship between Rules 702 and 703. The amendment makes clear that the sufficiency of the basis of an expert's testimony is to be decided under Rule 702. Rule 702 sets forth the overarching requirement of reliability, and an analysis of the sufficiency of the expert's basis cannot be divorced from the ultimate reliability of the expert's opinion. In contrast, the "reasonable reliance" requirement of Rule 703 is a relatively narrow inquiry. When an expert relies on inadmissible information, Rule 703 requires the trial court to determine whether that information is of a type reasonably relied on by other experts in the field. If so, the expert can rely on the information in reaching an opinion. However, the question whether the expert is relying on a *sufficient* basis of information—whether admissible information or not—is governed by the requirements of Rule 702.

The amendment makes no attempt to set forth procedural requirements for exercising the trial court's gatekeeping function over expert testimony. *See* Daniel J. Capra, *The Daubert Puzzle*, 38 Ga.L.Rev. 699, 766 (1998) ("Trial courts should be allowed substantial discretion in dealing with *Daubert* questions; any attempt to codify procedures will likely give rise to unnecessary changes in practice and create difficult questions for appellate review."). Courts have shown considerable ingenuity and flexibility in considering challenges to expert testimony under *Daubert*, and it is contemplated that this will continue under the amended Rule. *See, e.g., Cortes-Irizarry v. Corporacion Insular*, 111 F.3d 184 (1st Cir. 1997) (discussing the application of *Daubert* in ruling on a motion for summary judgment); *In re Paoli R.R. Yard PCB Litig*., 35 F.3d 717, 736, 739 (3d Cir. 1994) (discussing the use of *in limine* hearings); *Claar v. Burlington N.R.R*., 29 F.3d 499, 502–05 (9th Cir. 1994) (discussing the trial court's technique of ordering experts to submit serial affidavits explaining the reasoning and methods underlying their conclusions).

The amendment continues the practice of the original Rule in referring to a qualified witness as an "expert." This was done to provide continuity and to minimize change. The use of the term "expert" in the Rule does not, however, mean that a jury should actually be informed that a qualified witness is testifying as an "expert." Indeed, there is much to be

said for a practice that prohibits the use of the term "expert" by both the parties and the court at trial. Such a practice "ensures that trial courts do not inadvertently put their stamp of authority" on a witness's opinion, and protects against the jury's being "overwhelmed by the so-called 'experts'." Hon. Charles Richey, *Proposals to Eliminate the Prejudicial Effect of the Use of the Word "Expert" Under the Federal Rules of Evidence in Criminal and Civil Jury Trials*, 154 F.R.D. 537, 559 (1994) (setting forth limiting instructions and a standing order employed to prohibit the use of the term "expert" in jury trials).

GAP Report—Proposed Amendment to Rule 702. The Committee made the following changes to the published draft of the proposed amendment to Evidence Rule 702:

1. The word "reliable" was deleted from Subpart (1) of the proposed amendment, in order to avoid an overlap with Evidence Rule 703, and to clarify that an expert opinion need not be excluded simply because it is based on hypothetical facts. The Committee Note was amended to accord with this textual change.

2. The Committee Note was amended throughout to include pertinent references to the Supreme Court's decision in *Kumho Tire Co. v. Carmichael*, which was rendered after the proposed amendment was released for public comment. Other citations were updated as well.

3. The Committee Note was revised to emphasize that the amendment is not intended to limit the right to jury trial, nor to permit a challenge to the testimony of every expert, nor to preclude the testimony of experience-based experts, nor to prohibit testimony based on competing methodologies within a field of expertise.

4. Language was added to the Committee Note to clarify that no single factor is necessarily dispositive of the reliability inquiry mandated by Evidence Rule 702.

COMMITTEE NOTES ON RULES—2011 AMENDMENT

The language of Rule 702 has been amended as part of the restyling of the Evidence Rules to make them more easily understood and to make style and terminology consistent throughout the rules. These changes are intended to be stylistic only. There is no intent to change any result in any ruling on evidence admissibility.

‹ Rule 701. Opinion Testimony by Lay Witnesses up Rule 703. Bases of an Expert ›