

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF MISSOURI  
EASTERN DIVISION

UNITED STATES OF AMERICA, )  
)  
Plaintiff, )  
)  
and )  
)  
SIERRA CLUB, )  
)  
Plaintiff-Intervenor, )  
)  
vs. )  
)  
AMEREN MISSOURI, )  
)  
Defendant. )

No. 4:11 CV 77 RWS

**MEMORANDUM & ORDER**

Defendant Ameren Missouri moves to exclude the opinion of Plaintiff-Intervenor Sierra Club’s expert witness, Dr. Philippe Grandjean. Dr. Grandjean’s opinions are relevant to determining the balance of equities under an eBay analysis, he is well-qualified to opine on the significance of mercury emissions, and his methods are reliable. As a result, I must deny Ameren’s Daubert motion to exclude Dr. Grandjean’s testimony.

**BACKGROUND**

On January 23, 2017, after a bench trial, I found that Ameren violated the Clean Air Act, 42 U.S.C. § 7401 et seq., by failing to obtain a permit before

making major modifications to its Rush Island Plant. (ECF No. 852). The liability and remedies phases of this case were severed.

At the remedy phase trial, the Sierra Club seeks to call Dr. Philippe Grandjean as an expert witness. Dr. Grandjean teaches environmental medicine at Harvard University and the University of Southern Denmark. (Brief in opposition, filed under seal at ECF No. 989 at 2). His research focuses on methylmercury, a form of mercury known to cause severe human health impacts. (Id. at 3). He has an M.D. and a Ph.D. and has published more than 500 articles on human health effects of toxic exposure. (Id. at 2-3).

Dr. Grandjean's expert disclosure report explains how elemental and airborne mercury released from power plants are transported through the environment and transformed into methylmercury. Dr. Grandjean's report discusses, for example, (1) that all airborne and elemental mercury eventually becomes methylmercury (2) that methylmercury bioaccumulates in fish, (3) that it is difficult keep one's methylmercury exposure below the Environmental Protection Agency's (EPA) reference dose when eating recommended quantities of fish, (4) that about 16% of childbearing age women in the U.S. have blood mercury concentrations higher than the recommended amount, and (5) that methylmercury causes neurophysiological and neurophysiological deficits for fetuses detectable through young adulthood, among other harms.

The Sierra Club intends to use Dr. Grandjean's report to demonstrate the benefits of installing FGD on Rush Island as part of an "historic BACT analysis." According to the Sierra Club, an historic analysis is necessary to determine what emissions limit Rush Island should have been subject to, the excess emissions released above that limit, and correspondingly, what remedy is appropriate now. Ameren argues that such an historic analysis is irrelevant to determining an appropriate remedy under the eBay four-factor test. eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 391 (2006). For that reason, Ameren argues that Dr. Grandjean's opinion is unhelpful, unreliable, and should be excluded.

### **LEGAL STANDARD**

Pursuant to Federal Rule of Evidence 702 and Daubert, I must "ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable." Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 589, (1993). Expert testimony must be excluded if its reasoning or methodology is either unreliable or unreliably applied to the facts of the case. Id. 592-93. The burden is on the party offering the expert testimony to prove that it is reliable. Wagner v. Hesston Corp., 450 F.3d 756, 758 (8th Cir. 2006). The objective of these requirements are to make sure that experts "employ[] in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." Kumho Tire Co. v. Carmichael, 526 U.S. 137, 152 (1999). Even so, "Rule 702 reflects an

attempt to liberalize the rules governing the admission of expert testimony. . . .The rule clearly is one of admissibility rather than exclusion.” Lauzon v. Senco Prod., Inc., 270 F.3d 681, 686 (8th Cir. 2001) (internal citations and quotations removed).

### **ANALYSIS**

Ameren argues that Dr. Grandjean’s proposed testimony is (1) unreliable and (2) unhelpful to the trier of fact, because it is not applied properly to the facts at issue. Marmo v. Tyson Fresh Meats, Inc., 457 F.3d 748, 758 (8th Cir. 2006).

Both arguments derive from Dr. Grandjean’s failure to analyze the specific fate of mercury released from Rush Island. According to Ameren,

Dr. Grandjean did no analysis of how far mercury emissions from Rush Island travel away from the plant . . . He did no modeling of mercury emissions from Rush Island, and he gave no opinions on which, if any, bodies of water may be polluted with mercury from Rush Island. . . . He also testified that he did no analysis of adverse health effects that might result from consuming fish from bodies of water near Rush Island. . . . Dr. Grandjean testified that he did not perform any risk assessment to estimate what benefit might occur from reducing the amount of mercury emitted from Rush Island . . . .

(ECF No. 964 at 9). These omissions would be fatal if the Sierra Club intended to use Dr. Grandjean to quantify the specific health effects of excess mercury emissions. The Sierra Club, however, plans to use Dr. Grandjean’s testimony to explain why mercury, in general, is a harmful pollutant. Coupled with the testimony of Dr. Stoudt, the Sierra Club plans to use this information to demonstrate the benefits of FGD control technology for an historic BACT

determination at Rush Island. Specifically, (1) Dr. Stoudt plans to testify that 162 pounds excess mercury was emitted because Rush Island had no FGD installed; (2) Dr. Grandjean plans to testify that this release of mercury is generally bad for society, because it will all be converted to methylmercury, which is a grave threat to public health; and (3) the Plaintiffs would then argue that the benefit of avoiding excess mercury emissions would have weighed in favor of installing FGD at Rush Island.

Most finders of fact have an understanding that mercury is harmful to human health. Dr. Grandjean's testimony is not needed to establish that point. However, the chemical speciation of toxic mercury and its general fate in the environment are not common knowledge. Elemental or airborne mercury, for example, is not in itself toxic, according to Dr. Grandjean. (ECF No. 964-2 at 10). However, elemental mercury is eventually converted to toxic, methylmercury in the environment. (ECF No. 995 at 11). These are the kinds of details that will assist a trier of fact in determining how expected emissions should be considered as part of an historic BACT analysis.

Ameren argues that these details are irrelevant, because "past" benefits do not factor into the eBay analysis, when evaluating an injunction. (ECF No. 1017 at 1). However, the eBay factors are broad. The first two factors include whether a plaintiff has "suffered irreparable injury" and whether "remedies available at law,

such as monetary damages, are inadequate to compensate for that injury.” 547 U.S. at 391. Environmental harm such as mercury pollution “by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, i.e., irreparable.” Amoco Prod. Co. v. Gambell, 480 U.S. 531, 545 (1987). For this reason, the Sierra Club may refer to excess mercury emissions when arguing for injunctive relief. As a result, I cannot say that Dr. Grandjean’s testimony is unhelpful to the trier of fact.

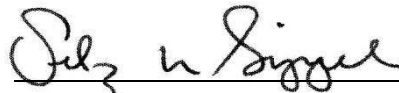
Ameren also argues that Dr. Grandjean’s testimony is unreliable because Ameren installed a mercury pollution control device on Rush Island in 2015. Dr. Grandjean has not identified how that device would affect mercury emissions from Rush Island. However, Dr. Staudt considered that installation date when estimating the excess mercury that was emitted. For that reason, Dr. Grandjean’s failure to discuss that pollution control device does not make his opinion unreliable.

As a result, I cannot say that Dr. Grandjean’s opinions are “so fundamentally unsupported that [they] could offer no assistance” to the factfinder in this case. Synergetics, Inc. v. Hurst, 477 F.3d 949, 956 (8th Cir. 2007). Dr. Grandjean’s opinions may have weaknesses because his analysis explains the societal impact of all mercury, rather than the specific impact of mercury emitted from Rush Island. However, Ameren can challenge those weaknesses with

“[v]igorous cross-examination” and “presentation of contrary evidence.” Daubert,  
509 U.S. at 596.

Accordingly,

**IT IS HEREBY ORDERED** that Ameren Missouri’s motion to exclude Dr.  
Philippe Grandjean’s expert opinion, [No. 963], is **DENIED**.



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RODNEY W. SIPPEL  
UNITED STATES DISTRICT JUDGE

Dated this 27th day of March, 2019.