

► **Commission Dockets** | [previous page](#)

EL19-003 – In the Matter of the Application by Crowned Ridge Wind, LLC for a Permit of a Wind Energy Facility in Grant and Codrington Counties

Evidentiary Hearing Exhibits

Crowned Ridge Wind, LLC

- A1 - Crowned Ridge Wind Farm's Application
- A1-A - Appendix A – Figures; Figure 1 - Project Area; Figure 2 - Public Land and Facilities; Figure 3 - Project Map; Figure 4a - TypicA1 Wind Turbine Diagram; Figure 4b -TypicA1 Wind Turbine Diagram; Figure 5 - TypicA1 Turbine Construction Site Layout; Figure 6 - EnvironmentA1 Constraints; Figure 7 - Constraints Map; Figure 8 - Topographic Map; Figure 9a - Surficial Geology; Figure 9b - Geology Cross Sections; Figure 10 - Bedrock Geology Figure 11 - Soil Types; Figure 12 - Water Resources; Figure 13 - Land Use; and Figure 14 - Common Sound Levels in the Environment
- A1-B - Appendix B - Agency Coordination Dates and Correspondence
- A1-C - Appendix C - Dakota Skipper and Powesheik Skipperling Survey Report
- A1-D - Appendix D - 2017-2018 Raptor Nest Survey Report
- A1-E - Appendix E - Avian Use Survey Report
- A1-F - Appendix F - Bat Habitat Assessment Report
- A1-G - Appendix G - Bat Acoustic Survey Report
- A1-H - Appendix H - Sound Level Modeling Report
- A1-I - Appendix I - Shadow Flicker Modeling Report
- A1-J - Appendix J - County Conditional Use Permits
- A1-K - Appendix K - Property Value Effect Studies
- A1-L - Appendix L - Decommissioning Plan
- A1-M - Appendix M - Telecommunication Studies
- A2 - Pre-filed Testimony of Jay Haley
- A3 - Pre-filed Testimony of Kimberly Wells, PH.D.
- A4 - Pre-filed Testimony of Mark Thompson
- A5 - Pre-filed Testimony and Exhibits of Tyler Wilhelm and Sam Massey
- A6 - Supplemental Figure 3a
- A7 - Responses to PUC Staffs First Set of Data Requests
- A7-1 - Attachment to DR 1-1
- A7-2 - Attachment 2 to DR 1-7 Confidential (not available to the public)
- A7-3 - Attachment 1 to DR 1-13 Confidential (not available to the public)
- A7-4 - Attachment 1 to DR 1-7 Confidential (not available to the public)
- A7-5 - Attachment 1 to DR 1-9 Confidential (not available to the public)
- A7-6 - Attachment to DR 1-10
- A8 - EAPC Wind Energy's Letter and Updated Appendices A through D for Appendix H
- A9 - EAPC Wind Energy's Letter and Updated Appendices A through D for Appendix I
- A10 - EAPC Wind Energy's Letter and Updated Landowner Participation Status for Appendix H
- A11 - EAPC Wind Energy's Letter and Updated Landowner Participation Status for Appendix I
- A12 - US Fish and Wildlife Service's Letter regarding Environmental Comments
- A13 - US Fish and Wildlife Service's Memo regarding Region 6 guidance for Minimizing Effects from Power Line Projects within the Whooping Crane Migration Corridor
- A14 - U.S. Fish and Wildlife Service, Region 6, Mountain-Prairie Region's Outline for a Bird and Bat Conservation Strategy: Wind Energy Projects
- A15 - 2013 U.S. Fish and Wildlife Service's Revised Voluntary guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning
- A16 - Responses to PUC Staffs Second Set of Data Requests
- A16-1 - Attachment 1 to 2-30 Confidential (not available to the public)
- A16-2 - Attachment 1 to 2-15
- A16-3 - Attachment 1 to 2-8
- A16-4 - Attachment 1 to 2-13

- A17 - Supplement to 1-11; Appendixes A, B & D
- A18 - Supplement to 1-12; Appendixes B & D
- A19 - Responses to PUC Staffs Second Set of Data Requests
- A20 - Responses to Amber Christenson and Kristi Mogen's First Set of Data Requests
- A20-1 - Attachment 1 to 1-6
- A20-2 - Attachment 1 to 1-8
- A20-3 - Attachment 1 to 1-9
- A20-4 - Attachment 1 to 1-10
- A20-5 - Attachment 1 to 1-11
- A20-6 - Attachment 1 to 1-12
- A20-7 - Attachment 1 to 1-13
- A20-8 - Attachment 1 to 1-17
- A20-9 Attachment 1 to 1-18
- A20-10 - Attachment 1 to 1-20
- A20-11 - Attachment 1 to 1-22
- A20-12 - Attachment 1 to 1-23
- A20-13 - Attachment 1 to 1-46
- A20-14 - Attachment 1 to 1-152- Applicant's Responses to Staff
- A20-15 - Attachment 1 to 2-8
- A20-16 - Attachment 1 to 2-13
- A20-17 - Attachment 1 to 2-15
- A20-18 - Supplement to 1-12; Appendix E
- A20-19 - Supplement to 1-12; Appendix F
- A20-20 - Supplement to 1-12 ; Appendix H
- A21 - Supplemental Testimony of Mark Thompson
- A22 - Supplemental Testimony of Jay Haley
- A22-1 - Exhibit 1 - Supplemental Material That Updates Sound Study to Reflect Landowner Participation Status
- A22-2 - Exhibit 2 - Tables: Crown cd Ridge Sound Level Tabular Results Sorted by Receptor ID
- A22-3 - Exhibit 3 - Supplemental Material That Updates Shadow/Flicker Study to Reflect Landowner Participation Status
- A23 - Supplemental Testimony of Tyler Wilhelm and Sam Massey
- A24 - Supplemental Testimony of Christopher Ollson
- A24-1 - Exhibit 1 - Christopher Ollson Curriculum Vitae
- A24-2 - Exhibit 2 - "Health Effects and Wind Turbines: A Review of the Literature," Knopper & Ollson
- A24-3 - Exhibit 3 - "Effects of Wind Turbine Noise on Self-Reported and Objective Measures of Sleep," Michaud et al.
- A24-4 - Exhibit 4 - "Impact of Wind Turbine Sound on Annoyance, Self-Reported Sleep Disturbance and Psychological Distress," Bakker et al.
- A24-5 - Exhibit 5 - "Before-After Field Study of Effects of Wind Turbine Noise on Polysomnographic Sleep Parameters," Jalai et al.
- A24-6 - Exhibit 6 - "Health-based Audible Noise Guidelines Account for Infrasound and Low-Frequency Noise Produced by Wind Turbines," Berger et al.
- A24-7 - Exhibit 7 - "Measurement and Level of Infrasound From Wind Farms and Other Sources," Turnbull et al.
- A24-8 - Exhibit 8 - "Wind Turbines and Health, A Critical Review of the Scientific Literature," McCunney et al.
- A24-9 - Exhibit 9 - "Low-frequency Noise Including Infrasound From Wind Turbines and Other Sources," Baden-Wurttemberg
- A24-10 - Exhibit 10 - "Wind Turbines and Human Health," Knopper et al.
- A24-11 - Exhibit 11 - "Exposure to Wind Turbine Noise: Perceptual Responses and Reported Health Effects," Michaud et al.
- A24-12 - Exhibit 12 - "Estimating Annoyance to Calculated Wind Turbine Shadow Flicker is Improved When Variables Associated with Wind Turbine Noise Exposure are Considered," Voicccscu et al.
- A24-13 - Exhibit 13 - "Notes on the Identification and Evaluation of Optical Emissions from Wind Turbines," (in German) Landerausschuss fur Immissionsschutz

- A24-13A - Exhibit 13 - "Notes on the Identification and Evaluation of Optical Emissions from Wind Turbines," (in English)
- A24-14 - Exhibit 14 - "Wind Turbines and Photosensitive Epilepsy," Epilepsy Society
- A24-15 - Exhibit 15 - "Wind Turbines Flicker, and Photosensitive Epilepsy: Characterizing the Flashing That May Precipitate Seizures and Optimizing Guidelines to Prevent Them." Harding et al.
- A24-16 - Exhibit 16 - "Potential of Wind Turbines to Elicit Seizures Under Various Meteorological Conditions," Smedley et al.
- A24-17 - Exhibit 17 - "Update of UK Shadow Flicker Evidence Base," Department of Energy and Climate Change
- A25 - Direct Testimony of Kimberly Wells, Ph.D. Adopted by Sarah Sappington
- A26 - Responses to PUC Staff s Third Set of Data Requests
- A26-1 - Attachment 1 to 3-2 Confidential (not available to the public)
- A26-2 - Attachment 1 to 3-5
- A26-3 - Attachment 1 to 3-10
- A27 - Responses to PUC Staff s Fourth Set of Data Requests
- A28 - Letter regarding Allocation of Tax Revenues
- A29 - Amendment to the Application Crowned Ridge Wind, LLC
- A30 - Letter regarding Kimberly Wells
- A31 - Supplemental Responses to PUC Staffs First Set of Data Requests
- A31-1 - Attachment - Notice of Entry of Findings of Fact
- A32 - Responses to PUC Staff s Fifth Set of Data Requests
- A32-1 - Attachment1 Staff 5-1 Confidential (not available to the public)
- A32-2 - Attachment 1 - Figure 3
- A33 - Applicant's Responses to Intervenor's Third Set
- A34 - Applicant's Responses to Intervenor's Second Set
- A35 - PUC Letter Forward Updated Maps
- A35-1 - Revised Figure 2 - Public Land and Facilities
- A35-2 - Revised Figure 3 - Project Map
- A35-3 - Revised Figure 3a - Project Map
- A35-4 - Revised Figure 6 - Environmental Constraints
- A35-5 - Revised Figure 7 - Constraints Map
- A35-6 - Revised Figure 8 - Topographic Map
- A35-7 - Revised Figure 9a - Surficial Geology
- A35-8 - Revised Figure 9b - Geology Cross Sections
- A35-9 - Revised Figure 10 - Bedrock Geology
- A35-10 - Revised Figure 11 - Soil Types
- A35-11 - Revised Figure 12 - Water Resources
- A35-12 - Revised Figure 13 - Land Use
- A36 - Supplemental Responses to PUC Staffs Data Request 2-41
- A37 - Rebuttal Testimony of Mark Thompson
- A37-1 - GE Power and Water - Original - Technical Documentation Wind Turbine Generator Systems 1 & 2MW Platform - 50/60 Hz A37-2 Confidential (not available to the public)
- A37-2 - Applicant's Response to Staff Data Request 5-2
- A37-3 - GE Recommendation "Setback Consideration Generic xxHz EN r04"
- A38 - Rebuttal Testimony of Chris Ollson
- A38-1 - Noise Annoyance in Canada
- A38-2 - The UK National Noise Attitude Survey 1999/2000 - Noise Forum Conference 20 May 2002
- A38-3 - The Association Between SelfReported and Objective Measures of Health and Aggregate Annoyance Scores Toward Wind Turbine Installations
- A38-4 - An Assessment of Quality of Life Using the WHOQOL-BREF Among Participants Living in the Vicinity of Wind Turbines
- A38-5 - The Effects of Environment and Classroom Noise on the Academic Attainments of Primary School Children
- A38-6 - Low-frequency Noise Incl. Infrasound From Wind Turbines and Other Sources
- A38-7 - The Pattern of Complaints about Australian Wind Farms Does Not Match the Establishment and Distribution of Turbines: Support for the Psychogenic, 'Communicated Disease' Hypothesis
- A39 - Rebuttal Testimony of Andrew Baker

- A39-1 - Qualifications
- A39-2 - Valbridge Property Advisors - Value Impact Study Report
- A39-3 - The Windy City: Property Value Impacts of Wind Turbines in an Urban Setting
- A40 - Rebuttal Testimony of Dr. Robert McCunney
- A40-1 - Curriculum Vitae
- A40-2 - Guidelines for the Diagnosis and Management of Asthma
- A40-3 - The Scope for Biased Recall of Risk-Factor Exposure in Case-Control Studies: Evidence from a Cohort Study of Scottish Men
- A40-4 - The Placebo and Nocebo Phenomena: Their Clinical Management and Impact on Treatment Outcomes
- A40-5 - Nocebo Effect of Informed Consent in Interventional Procedures
- A40-6 - The Nocebo Effect in the Context of Statin Intolerance
- A40-7 - Fright Factors About Wind Turbines and Health in Ontario Newspapers Before and After the Green Energy Act
- A40-8 - The Pattern of Complaints about Australian Wind Farms Does Not Match the Establishment and Distribution of Turbines: Support for the Psychogenic, 'Communicated Disease' Hypothesis
- A40-9 - Can Road Traffic Mask Sound from Wind Turbines? Response to Wind Turbine Sound at Different Levels of Road Traffic Sound
- A41 - Rebuttal Testimony of Richard Lampeter
- A41-1 - Curriculum Vitae
- A41-2 - Wind Turbine Health Impact Study: Report of Independent Expert Panel - January 2012
- A41-3 - Assessing Sound Emissions From Proposed Wind Farms & Measuring the Performance of Completed Projects
- A41-4 - Noise Control Engineering Journal - March-April 2011
- A42 - Rebuttal Testimony Sarah Sappington
- A42-1 - Maps
- A43 - Rebuttal Testimony of Jay Haley
- A43-1 - Crowned Ridge Wind Farm Shadow Flicker Iso—Lines Overview Map
- A43-2 - Crowned Ridge Wind Farm Sound Pressure Iso-Lines Overview Map
- A43-3 - Crowned Ridge Sound Level Tabular Results Sorted by Sound Level Realistic
- A43-4 - Crowned Ridge Sound Level Tabular Results Sorted by Sound Level (16 Turbines Removed)
- A43-5 Crowned Ridge Sound Level Tabular Results Sorted by Receptor ID Realistic
- A44 - Rebuttal Testimony of Tyler Wilhelm and Sam Massey
- A44-1 - Letter from Dennis Schmeling
- A44-2 - Updated Maps
- A45 - Applicant's Responses to Intervenor's Fifth Set of Data Requests to Crowned Ridge Wind, LLC
- A45-1 - Attachment 1 to 5-2
- A45-2 - Attachment 1 to 5-5
- A45-3 - Attachment 1 to 5-7
- A45-4 - Attachment 1 to 5-12
- A46 - Applicant's Responses to Staffs Sixth Set of Data Requests to Crowned Ridge Wind, LLC Confidential (not available to the public)
- A46-1 - Attachment 1 to 6-1
- A46-2 - Attachment 1 to 6-2
- A47 - The Ohio Power Siting Board - Amended Testimony of David M. Hessler
- A48 - Public Service Commission of Wisconsin - David M. Hessler's Exhibit 4 - Low Frequency Noise and Infrasound From Wind Turbines, Noise Control Engineering Journal
- A49 - PSC Docket No. 2535-CE-100 - Ex.-Clean Wisconsin - Hessler- 4 Low Frequency Noise and Infrasound From Wind Turbines, Noise Control Engineering Journal
- A50 - Transcript of Public Service Commission of Wisconsin - October 10, 2012, Docket N. 2535-CE-100
- A51 - Minnesota Regulation on Sound - 7030.0050 Noise Area Classification and 7030.0040 Noise Standards
- A53 - Final Land Status Map
- A54 - Replacement Final Land Status Map
- A55 - Proposed Turbine Drops and Moves

- A56 - Appendix D Sound ISO-Lines Map Book Hessler
- A57 - Appendix C-3 Sound Results Table Rev 6
- A58 - Final Land Status and Hessler 7 on Intervenors
- A59 - Final Land Status and Hessler 7 Turbine Moves
- A60 - Hessler 7 on Hessler Identified Non Participants
- A61 - Joint Stipulation of Agreed to Conditions Between Crowned Ridge and PUC Staff
- A62 - FAA Pending Turbine Locations
- A63 - Amended Condition 26 (Sound Level)
- A64 - Granquist Option Confidential (not available to the public)
- A65 - Papio Valley Land Confidential (not available to the public)
- A66 - Crowned Ridge Wind, LLC's Letter regarding Extreme Cold Weather Package
- A67 - Appendix C-1 Shadow Results Table Rev5
- A68 - Appendix C-2 Shadow Results Table Rev5
- A69 - Insurance Confidential (not available to the public)
- A70 - Turbines and Grasslands

PUC Staff

- S1 - Direct Testimony of David M. Hessler with Exhibits
- S1a - Staff's Responses to Applicant's First Data Request
- S2 - Direct Testimony of Darren Kearney with Exhibits
 - S2 - Direct Testimony of Darren Kearney with Exhibits Confidential (not available to the public)
- S3 - Direct Testimony of Tom Kirschenmann with Exhibits
- S4 - Direct Testimony of Paige Olson with Exhibits
- S5 - Additional Staff Data Requests
- S5 - Additional Staff Data Requests Confidential (not available to the public)
- S6 - Supplemental Responses to Staff Data Request 6
- S7 - Staff's Proposed Lek Monitoring Condition
- Judicial Notice - SB16

Intervenors

- I1 - Public Service Commission of Wisconsin - A Cooperative Measurement Survey and Analysis of Low Frequency and Infrasound at the Shirley Wind Farm in Brown County, Wisconsin
- I2 - NARUC - 2011 - Assessing Sound Emissions from Proposed Wind Farms & Measuring the Performance of Completed Projects
- I3- Paul Schomer, and Pranav Krishna Pamidighantam - A Possible Criterion for Wind Farms
- I4 - Research Gate - Health Effects From Wind Turbine Low Frequency Noise & Infrasound: Do Wind Turbines Make People Sick? That is the Issue
- I5 - David M. Hessler and George F. Hessler Jr. - Recommended Noise Level Design Goals and Limits at Residential Receptors for Wind Turbine Developments in the United States
- I6 - Partial Transcript of the Evidentiary Hearing of EL18-026
- I7 - Canons of Ethics for the Institute of Noise Control Engineering of the USA
- I8 - Night Time Noise Guidelines 2009 (WHO)
- I9a - Ollson 2014 Suncor Statement
- I9b - Ollson 2014 Suncor Statement
- I10 - Oil Son 2014 Presentation
- I11 - Thyen Exhibit A Memorandum 2007
- I12 - Thyen Exhibit B Release Letter 2012
- I13 - Thyen Exhibit C Sound Map 2019.5.24
- I14 - IAIA Assessment
- I15a - DR to Intervenors 4-1
- I15b - Jay Haley Resume
- I16 - SD License Search Mr. Haley
- I17a - ND License Search Mr. Haley
- I17b - ND License Search Mr. Haley
- I18 - MN License Search Mr. Haley
- I19 - MN license affidavit Mr. Haley
- I20 - Mr. Haley Cover letter App H 1/22/19

- I21 - Mr. Haley Cover letter App I 1/22/19
- I22 - Mr. Haley Cover letter Updated Appendices Sound A-D 2/19/19
- I23 - Mr. Haley Cover letter Updated Appendices Flicker A-0 2/19/19
- I24 - Mr. Haley Cover letter Landowner Participation Sound 2/26/19
- I25 - Mr. Haley Cover letter Landowner Participation Flicker 2/26/19
- I26 - Mr. Haley Cover letter Additional Structures Sound Ex 1 2/19/19
- I27 - Mr. Haley Cover letter Additional Structures Flicker Ex 3 2/19/19