

Ohio Department of Transportation Jack Marchbanks, Ph.D., Director

Mike DeWine, Governor

Office of Aviation 2829 West Dublin-Granville Rd. Columbus, OH 43235 614-793-5040 transportation.ohio.gov

September 11, 2023

Andrew Conway, P.E. Public Utilities Commission of Ohio Rates and Analysis Department Siting, Efficiency, and Renewable Energy Division 180 East Broad Street Columbus, Ohio 43215

Sent via electronic mail: Andrew.Conway@puco.ohio.gov

Application for certification of Grover Hill Wind Farm Project Subject: (Case No. 20-0417-EL-BGN)

Dear Mr. Conway,

Pursuant to Ohio Revised Code (ORC) \$4561.341, the Ohio Department of Transportation, Office of Aviation (ODOT) has reviewed the application for certification submitted by Starwood Energy Group, LLC for the Grover Hill Wind Farm to determine whether the proposed facility will constitute an obstruction to air space.

A determination for the Subject project was issued by this office on October 29, 2021 and was amended on August 19, 2022. Both determinations are attached. Since the issuance of the amended determination, the applicant has resubmitted two (2) additional aeronautical studies for review.

The 2 additional proposed wind turbine structures will be obstructions under the standards established by 14 CFR Part 77 and have been determined by the FAA to have an adverse effect on the safe and efficient use of navigable airspace by aircraft. However, ODOT Office of Aviation's determination is limited by statute to include only impacts to the clear zone, horizontal, conical, primary, approach and transitional surfaces of airports that have been issued a commercial operating certificate. Neither of the 2 additional proposed wind turbine structures impact these surfaces.

If you have any questions regarding this determination, please do not hesitate to contact our office.

Respectfully,

ODOT Office of Aviation 2829 W. Dublin Granville Road Columbus, OH 43235

Attach: FAA ASN 2023-WTE-854-OE Determination, FAA ASN 2023-WTE-855-OE Determination, ODOT Determination Letter 8/19/2022

Aeronautical Study No. 2023-WTE-854-OE



Mail Processing Center Federal Aviation Administration Southwest Regional Office Obstruction Evaluation Group 10101 Hillwood Parkway Fort Worth, TX 76177

Issued Date: 08/14/2023

Matthias Weigel Starwood Energy Group, LLC. 5 Greenwich Office Park 2nd Floor Greenwich, CT 06831

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine 20230310-34b
Location:	Grover Hill, OH
Latitude:	41-00-43.98N NAD 83
Longitude:	84-28-02.28W
Heights:	727 feet site elevation (SE)
	656 feet above ground level (AGL)
	1383 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Air Missions (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1) __X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 02/14/2025 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before September 13, 2023. In the event an interested party files a petition for review, it must contain a full statement of the basis upon which the petition is made. Petitions can be submitted to the Manager of the Rules and Regulations Group via e-mail at OEPetitions@faa.gov, via mail to Federal Aviation Administration, Air Traffic Organization, Rules and Regulations Group, Room 425, 800 Independence Ave, SW, Washington, DC 20591, or via facsimile (202) 267-9328. FAA encourages the use of email to ensure timely processing.

This determination becomes final on September 23, 2023 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Rules and Regulations Group via telephone - 202-267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should

be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with selfcontained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2023-WTE-854-OE.

Signature Control No: 575992618-596362776 Mike Helvey Manager, Obstruction Evaluation Group

Attachment(s) Additional Information Map(s) (DNH-WT)

Additional information for ASN 2023-WTE-854-OE

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

A list of commonly used acronyms and abbreviations is available at the end of this document. A full list is available at the FAA's public website at https://oeaaa.faa.gov/oeaaa/downloads/external/content/ FAA_Acronyms.pdf .

This narrative describes two new studies representing new wind turbine locations for the proposed Grover Hill wind turbine project near Grover Hill, OH.

The proposed wind turbine project lies approximately between 2.2 NM north northwest to 2.1 NM southwest from the town of Grover Hill, OH.

For the sake of efficiency, the 2 proposed wind turbines in this project that have similar impacts to 14 CFR Part 77 standards are included in this narrative. Separate letters for each study can be found at the OE/AAA website (http://oeaaa.faa.gov).

1. LOCATION OF PROPOSED CONSTRUCTION

The Aeronautical Study Number (ASNs), Structure Names, Above Ground Level (AGL) heights, Above Mean Sea Level (AMSL) heights and coordinates for each proposed structure are listed as follows:

ASN	Structure Name	AGL/AMSL	LAT/LONG	
2023-WTE-854-OE	/ 20230310-34b	/ 656 / 1383	/ 41-00-43.98N / 84-28-02.	28W
2023-WTE-855-OE	/ 20230310-35a	/ 656 / 1384	/ 41-00-33.78N / 84-28-17.0	06W

2. OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed Part 77 standards as described below.

a. Section 77.17(a)(1): Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. All proposed structures would exceed this surface by 157 feet.

b. Section 77.17(a)(4) -- A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the IFR en route minimum obstacle clearance altitude

The 2 proposed structures would have the following effect: HUUVR ONE ARRIVAL (RNAV) Increase Minimum Obstruction Clearance Altitude (MOCA) from MSKTS to JJUST from 2300 feet to 2400 feet

AMSL. (Procedure serves KAKR KCAK 1G3). The height at which there is no effect is at or below 1300 feet AMSL. No objection due to previous coordination with the affected Air Traffic Facility.

3. VFR ROUTE

VFR en route is evaluated in accordance with Part 77 Section 77.29 (a)(1): the impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At 656 feet AGL, the 2 structures would extend into airspace normally utilized for VFR en route flight by 157 feet. The structures would be located within 2 statute miles of a VFR Route as defined by FAAO 7400.2, Section 6-3-8 and would have an adverse effect upon VFR air navigation.

4. RADAR IMPACTS

The FAA found that the 2 proposed wind turbines would have a Radar Line of Sight (RLOS) impact to the Airport Surveillance Radar (ASR) -9 at Fort Wayne, IN (FWA). Since they are visible to the ASR, they could cause unwanted primary-only returns (clutter) and primary-only target drops, all in the immediate area of the turbines. Also, tracked primary-only targets could diverge from the aircraft path and follow wind turbines, when the aircraft is over or near the turbines.

No effect will occur on the Secondary (Beacon) Radar System.

4. CIRCULATION AND COMMENTS RECEIVED

The proposed wind turbine project was originally circulated for public comment under ASN 2021-WTE-140-OE on 02 June 2021. No comments were received by 09 July 2021. The two studies described in this narrative represent minor location changes and did not cause any additional adverse effects as described in the original public notice, therefore, public notice for comment was deemed unnecessary for these 2 proposals. MOCA adverse effects were not circularized to the public for comments because the effect to the MOCAs identified above only requires an internal review from the FAA Air Traffic Control facility.

5. BASIS FOR DECISION

a. IFR EFFECTS

The aeronautical study identified an MSA increase to the Boscobel Airport (OVS) Boscobel WI, RWY 25 RNAV (GPS) terminal approach procedure. MSA altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control (ATC). Consequently, MSAs are not circulated for public comment as they are not considered a factor in determining the extent of adverse effect.

b. VFR EFFECTS

Study for possible VFR effect disclosed that the proposed structures would have no effect on any existing or proposed arrival or departure VFR operations or procedures. The 2 proposed wind turbines in this narrative exceed the Part 77 Section 77.17(a)(1) surface by 157 feet, however, no substantial adverse effect was found and no issues were raised during the original public comment period. At 656 feet AGL, the structures would be within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm. In accordance with FAA Order 7400.2, the proposed wind farm would not

affect a significant volume of aircraft and therefore it is determined it will not have a substantial adverse effect on en route VFR flight operations.

c. RADAR EFFECTS

The aeronautical study identified 2 of the proposed turbines as being within the RLOS for the Arlington-IA (QJO) Common Air Route Surveillance Radar (CARSR). Impacts to radar only require a review by the responsible ATC facility and military services. Further study determined the structures would have no substantial adverse effect on military or air traffic operations at this time.

d. CHARTING AND CUMULATIVE EFFECT

The proposed structures would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

The cumulative impact of the proposed structures, when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose any substantial adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposals affect the capacity of any known existing or planned public-use or military airport.

6. DETERMINATION - NO HAZARD TO AIR NAVIGATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

7. CONDITIONS

At least ten (10) days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (http://oeaaa.faa.gov). This actual construction notification will be used to update published instrument flight procedures.

Additionally, within five days after each structures reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (http://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

ACRONYMS & ABBREVIATIONS AGL, Above Ground Level AMSL, Above Mean Sea Level ARP, Airport Reference Point ARSR, Air Route Surveillance Radar ARTCC, Air Route Traffic Control Center ASN, Aeronautical Study Number ASR, Airport Surveillance Radar ATC, Air Traffic Control

ATCT, Air Traffic Control Tower CARSR, Common Air Route Surveillance Radar CFR, Code of Federal Regulations DME, Distance Measuring Equipment FAA, Federal Aviation Administration FUS, Fusion GPS, Global Positioning System IFR, Instrument Flight Rules LAT, Latitude LONG, Longitude Min, Minimum MSL, Mean Sea Level MVA, Minimum Vectoring Altitude NA, Not Authorized NAS, National Airspace System NEH, No Effect Height NM, Nautical Mile NOTAM, Notice to Airmen NPF, Notice of Preliminary Findings OE, Obstruction Evaluation Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace. RLOS, Radar Line of Sight SE, Site Elevation SM, Statute Miles **TERPS**, Terminal Instrument Procedures V, Victor Airway VFR, Visual Flight Rules WTE, Wind Turbine East WTW, Wind Turbine West

TOPO Map for ASN 2023-WTE-854-OE





Aeronautical Study No. 2023-WTE-855-OE



Mail Processing Center Federal Aviation Administration Southwest Regional Office Obstruction Evaluation Group 10101 Hillwood Parkway Fort Worth, TX 76177

Issued Date: 08/14/2023

Matthias Weigel Starwood Energy Group, LLC. 5 Greenwich Office Park 2nd Floor Greenwich, CT 06831

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine 20230310-35a
Location:	Grover Hill, OH
Latitude:	41-00-33.78N NAD 83
Longitude:	84-28-17.06W
Heights:	728 feet site elevation (SE)
	656 feet above ground level (AGL)
	1384 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

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2. OBSTRUCTION STANDARDS EXCEEDED

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AMSL. (Procedure serves KAKR KCAK 1G3). The height at which there is no effect is at or below 1300 feet AMSL. No objection due to previous coordination with the affected Air Traffic Facility.

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5. BASIS FOR DECISION

a. IFR EFFECTS

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6. DETERMINATION - NO HAZARD TO AIR NAVIGATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

7. CONDITIONS

At least ten (10) days before the start of construction the proponent is required to file a FAA form 7460-2, Part 1, Actual Construction notification, at the OE/AAA website (http://oeaaa.faa.gov). This actual construction notification will be used to update published instrument flight procedures.

Additionally, within five days after each structures reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (http://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

ACRONYMS & ABBREVIATIONS AGL, Above Ground Level AMSL, Above Mean Sea Level ARP, Airport Reference Point ARSR, Air Route Surveillance Radar ARTCC, Air Route Traffic Control Center ASN, Aeronautical Study Number ASR, Airport Surveillance Radar ATC, Air Traffic Control

ATCT, Air Traffic Control Tower CARSR, Common Air Route Surveillance Radar CFR, Code of Federal Regulations DME, Distance Measuring Equipment FAA, Federal Aviation Administration FUS, Fusion GPS, Global Positioning System IFR, Instrument Flight Rules LAT, Latitude LONG, Longitude Min, Minimum MSL, Mean Sea Level MVA, Minimum Vectoring Altitude NA, Not Authorized NAS, National Airspace System NEH, No Effect Height NM, Nautical Mile NOTAM, Notice to Airmen NPF, Notice of Preliminary Findings OE, Obstruction Evaluation Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace. RLOS, Radar Line of Sight SE, Site Elevation SM, Statute Miles **TERPS**, Terminal Instrument Procedures V, Victor Airway VFR, Visual Flight Rules WTE, Wind Turbine East WTW, Wind Turbine West

TOPO Map for ASN 2023-WTE-855-OE







Ohio Department of Transportation Mike DeWine, Governor Jack Marchbanks, Ph.D., Director

Office of Aviation 2829 West Dublin-Granville Rd. Columbus, OH 43235 614-793-5040 transportation.ohio.gov

August 19, 2022

Andrew Conway, P.E. Public Utilities Commission of Ohio Rates and Analysis Department Siting, Efficiency, and Renewable Energy Division 180 East Broad Street Columbus, Ohio 43215

Sent via electronic mail: Andrew.Conway@puco.ohio.gov

Application for certification of Grover Hill Wind Farm Project Subject: (Case No. 20-0417-EL-BGN)

Dear Mr. Conway,

Pursuant to Ohio Revised Code (ORC) \$4561.341, the Ohio Department of Transportation, Office of Aviation (ODOT) has reviewed the application for certification submitted by Starwood Energy Group, LLC for the Grover Hill Wind Farm to determine whether the proposed facility will constitute an obstruction to air space.

A determination for the Subject project was issued by this office on October 29, 2021 and is attached. Since the issuance of that determination, the applicant has resubmitted six (6) additional aeronautical studies for review.

The 6 additional proposed wind turbine structures will be obstructions under the standards established by 14 CFR Part 77 and have been determined by the FAA to have an adverse effect on the safe and efficient use of navigable airspace by aircraft. However, ODOT Office of Aviation's determination is limited by statute to include only impacts to the clear zone, horizontal, conical, primary, approach and transitional surfaces of airports that have been issued a commercial operating certificate. None of the 6 additional proposed wind turbine structures impact these surfaces.

If you have any questions regarding this determination, please do not hesitate to contact our office.

Respectfully,

ODOT Office of Aviation 2829 W. Dublin Granville Road Columbus, OH 43235

Attach: FAA ASN 2022-WTE-1836-OE Determination, ODOT Determination Letter 10/29/2021



Mail Processing Center Federal Aviation Administration Southwest Regional Office Obstruction Evaluation Group 10101 Hillwood Parkway Fort Worth, TX 76177 Aeronautical Study No. 2022-WTE-1836-OE Prior Study No. 2021-WTE-141-OE

Issued Date: 07/08/2022

Matthias Weigel Starwood Energy Group, LLC. 5 Greenwich Office Park 2nd Floor Greenwich, CT 06831

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine 20220324-26a
Location:	Grover Hill, OH
Latitude:	41-01-53.12N NAD 83
Longitude:	84-28-56.02W
Heights:	726 feet site elevation (SE)
	656 feet above ground level (AGL)
	1382 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/synchronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 10 days prior to start of construction (7460-2, Part 1) __X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before August 07, 2022. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted to the Manager of the Rules and Regulations Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on August 17, 2022 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Rules and Regulations Group via telephone - 202-267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be used to light the structure during the construction phase. If power is not available, turbines shall be lit with self-contained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Paul Holmquist, at (206) 231-2990, or paul.holmquist@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2022-WTE-1836-OE.

Signature Control No: 519770839-541989359 Mike Helvey Manager, Obstruction Evaluation Group (DNH-WT)

Attachment(s) Additional Information Map(s)

Additional information for ASN 2022-WTE-1836-OE

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

Abbreviations		
AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical
mile		
ASN- Aeronautical Study Number	CAT - category aircraft	RNAV- area
navigation		
MDA - minimum descent altitude		
Part 77 - Title 14 Code of Federal Regula	tions (CFR) Part 77, Safe, Efficient Use and	l Preservation of the
Navigable Airspace		

The proposed Grover Hill wind turbine project near Grover Hill, OH consists of 29 wind turbines. The six (6) proposed wind turbines described in this narrative represent a minor relocation of four wind turbines and two (2) additional wind turbines that are closely grouped with ASN 2022-WTE-1837-OE. The proposed wind turbine project lies approximately counterclockwise between 2.4 NM northwest to 2.4 NM southwest to 1.0 NM southeast from the town of Grover Hill, OH.

For the sake of efficiency, the 6 proposed wind turbines in this project are included in this narrative.

1. PROPOSAL DESCRIPTION

The Aeronautical Study Number (ASNs), Structure Names, Above Ground Level (AGL) heights, Above Mean Sea Level (AMSL) heights and coordinates for each proposed structure are listed as follows:

ASN	Structure Name	AGL/AMSL	LAT/LONG
2022-WTE-1836-OF	/ 20220324-269 /	656 / 1382 / 41-01-53 12	N / 81-28-56 02W
2022-WTE-1830-OE 2022-WTE-1837-OE	/ 20220324-20a / / 20220324-31a /	656 / 1387 / 41-00-34.76	N / 84-29-23.30W
2022-WTE-1838-OE	/ 20220324-34a /	656 / 1382 / 41-00-44.64	N / 84-28-04.92W
2022-WTE-1839-OE	/ 20220324-43a /	656 / 1387 / 40-59-59.22	N / 84-28-53.88W
2022-WTE-2566-OE	/ R31a /	656 / 1386 / 41-00-35.891	N / 84-29-23.06W
2022-WTE-2567-OE	/ R31b /	656 / 1385 / 41-00-36.471	N / 84-29-23.02W

2. 14 CFR PART 77 OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed 14 CFR Part 77 standards as described below.

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. All proposed structures would exceed this surface by 157 feet.

b. Section 77.17(a)(4) -- A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the IFR en route minimum obstacle clearance altitude.

All six proposed structures would have the following effect: HUUVR ONE ARRIVAL (RNAV) Increase Minimum Obstruction Clearance Altitude (MOCA) from MSKTS to JJUST from 2300 feet to 2400 feet AMSL. (Procedure serves Akron Fulton International Airport (KAKR), Akron-Canton Regional Airport (KCAK), and Kent State University (1G3)).

3. EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): the impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At 656 feet AGL, all structures would extend into airspace normally utilized for VFR en route flight by 157 feet. The structures would be located within 2 statute miles of a VFR Route as defined by FAA Order 7400.2, Section 6-3-8 and would have an adverse effect upon VFR air navigation.

b. Section 77.29 (a)(6); potential effect on ATC radar, direction finders, ATC tower line-of-sight visibility, and physical or electromagnetic effects on air navigation, communication facilities, and other surveillance systems.

The FAA found that 6 proposed wind turbines would have a Radar Line of Sight (RLOS) impact to the Airport Surveillance Radar (ASR) -9 at Fort Wayne, IN (FWA). Since they are visible to the ASR, they could cause unwanted primary-only returns (clutter) and primary-only target drops, all in the immediate area of the turbines. Also, tracked primary-only targets could diverge from the aircraft path and follow wind turbines, when the aircraft is over or near the turbines.

No effect will occur to the Secondary (Beacon) Radar System.

4. CIRCULATION AND COMMENTS RECEIVED

The proposed wind turbine project was originally circulated for public comment under ASN 2021-WTE-140-OE on 02 June 2021. No comments were received by 09 July 2021. The six studies described in this narrative represent minor location changes and did not cause any additional adverse effects as described in the original public notice, therefore, public notice for comment was deemed unnecessary for these 6 proposals. MOCA adverse effects were not circularized to the public for comments because the effect to the MOCAs identified above only requires an internal review from the FAA Air Traffic Control facility.

5. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no effect on any existing or proposed arrival or departure VFR operations or procedures. The proposed structures would be located beyond the normal traffic pattern airspace for any known public use or military airports. At 656 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm. In accordance with FAAO 7400.2, the

proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The aeronautical study disclosed that the proposed structures would have an effect on a MOCA. MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VHF Omnidirectional Radio Range (VOR) navigational facility. Structures that only affect the MOCA are not considered to have a substantial adverse effect and only require a review by the ATC facility. A review by the controlling facility determined that increasing the MOCA altitudes would ensure the required obstacle clearances are maintained and therefore would not have a substantial adverse effect on air traffic operations. There are no other impacts to existing or proposed arrival, departure, or en route IFR operations or procedures.

The proposed turbine(s) would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

The cumulative impact of the proposed structure(s), when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose a substantial adverse effect on existing or proposed public-use or military airports, nor does the proposal(s) affect the capacity of any known existing or planned public-use or military airport. There are no substantial physical or electromagnetic effects on the operation of air navigation and communications facilities and there are no effects on any airspace and routes used by the military.

6. DETERMINATION - NO HAZARD TO AIR NAVIGATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, 10 days prior to beginning construction, at the OE/AAA website (http://oeaaa.faa.gov) for all six proposals described in this narrative.

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (http://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

TOPO Map for ASN 2022-WTE-1836-OE







Ohio Department of Transportation Mike DeWine, Governor Jack Marchbanks, Ph.D., Director

Office of Aviation 2829 West Dublin-Granville Rd. Columbus, OH 43235 614-793-5040 transportation.ohio.gov

October 29, 2021

Andrew Conway, P.E. Public Utilities Commission of Ohio Rates and Analysis Department Siting, Efficiency, and Renewable Energy Division 180 East Broad Street Columbus, Ohio 43215

Sent via electronic mail: Andrew.Conway@puco.ohio.gov

Application for certification of Grover Hill Wind Farm Project Subject: (Case No. 20-0417-EL-BGN)

Dear Mr. Conway,

Pursuant to Ohio Revised Code (ORC) §4561.341, the Ohio Department of Transportation, Office of Aviation (ODOT) has reviewed the application for certification submitted by Starwood Energy Group, LLC for the Grover Hill Wind Farm to determine whether the proposed facility will constitute an obstruction to air space.

The proposed 27 wind turbine structures will be obstructions under the standards established by 14 CFR Part 77 and have been determined by the FAA to have an adverse effect on the safe and efficient use of navigable airspace by aircraft. However, ODOT Office of Aviation's determination is limited by statute to include only impacts to the clear zone, horizontal, conical, primary, approach and transitional surfaces of airports that have been issued a commercial operating certificate. None of the proposed wind turbine structures impact these surfaces.

If you have any questions regarding this determination, please do not hesitate to contact our office.

Respectfully,

ODOT Office of Aviation 2829 W. Dublin Granville Road Columbus, OH 43235

Attach: FAA ASN 2021-WTE-157-OE Determination

Aeronautical Study No. 2021-WTE-157-OE



Mail Processing Center Federal Aviation Administration Southwest Regional Office Obstruction Evaluation Group 10101 Hillwood Parkway Fort Worth, TX 76177

Issued Date: 08/19/2021

Matthias Weigel Starwood Energy Group, LLC. 5 Greenwich Office Park 2nd Floor Greenwich, CT 06831

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Wind Turbine 20210129-42
Location:	Grover Hill, OH
Latitude:	41-00-44.10N NAD 83
Longitude:	84-30-05.63W
Heights:	728 feet site elevation (SE)
	656 feet above ground level (AGL)
	1384 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, white paint/sychronized red lights-Chapters 4,13(Turbines),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

__X__ At least 60 days prior to start of construction (7460-2, Part 1) __X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

This determination expires on 02/19/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before September 18, 2021. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted to the Manager of the Rules and Regulations Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on September 28, 2021 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Rules and Regulations Group via telephone - 202-267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates and heights. This determination is valid for coordinates within one (1) second latitude/longitude and up to the approved AMSL height listed above. If a certified 1A or 2C accuracy survey was required to mitigate an adverse effect, any change in coordinates or increase in height will require a new certified accuracy survey and may require a new aeronautical study.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

Additional wind turbines or met towers proposed in the future may cause a cumulative effect on the national airspace system. All information from submission of Supplemental Notice (7460-2 Part 2) will be considered the final data (including heights) for this structure. Any future construction or alteration, including but not limited to changes in heights, requires separate notice to the FAA.

Obstruction marking and lighting recommendations for wind turbine farms are based on the scheme for the entire project. ANY change to the height, location or number of turbines within this project will require a reanalysis of the marking and lighting recommendation for the entire project. In particular, the removal of previously planned or built turbines/turbine locations from the project will often result in a change in the marking/lighting recommendation for other turbines within the project. It is the proponent's responsibility to contact the FAA to discuss the process for developing a revised obstruction marking and lighting plan should this occur.

In order to ensure proper conspicuity of turbines at night during construction, all turbines should be lit with temporary lighting once they reach a height of 200 feet or greater until such time the permanent lighting configuration is turned on. As the height of the structure continues to increase, the temporary lighting should be relocated to the uppermost part of the structure. The temporary lighting may be turned off for periods when they would interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. An FAA Type L-810 steady red light fixture shall be

used to light the structure during the construction phase. If power is not available, turbines shall be lit with selfcontained, solar powered LED steady red light fixture that meets the photometric requirements of an FAA Type L-810 lighting system. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level. The use of a NOTAM (D) to not light turbines within a project until the entire project has been completed is prohibited.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Bill Ratts, at (816) 329-2544, or William.M.Ratts@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-WTE-157-OE.

Signature Control No: 466829396-491981907 Steve Phillips Manager, Obstruction Evaluation Group

(DNH -WT)

Attachment(s) Additional Information Map(s)

Additional information for ASN 2021-WTE-157-OE

All FAA determinations and circularized cases are public record and available at the FAA's public website; https://oeaaa.faa.gov. The distribution for proposals circularized for public comments includes all "known" aviation interested persons and those who do not have an aeronautical interest but may become involved with specific aeronautical studies. Notification includes both postcard mailers and email notifications to those with registered FAA accounts. The FAA does not have a database for all persons with an aeronautical and non-aeronautical interest. Therefore, the public is encouraged to re-distribute and forward notices of circularized cases to the maximum extent possible. Additionally, it is incumbent upon local state, county and city officials to share notice of circularized cases with their concerned citizens.

Abbreviations		
AGL - above ground level	AMSL - above mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	NM - nautical
mile		
ASN- Aeronautical Study Number	CAT - category aircraft	RNAV- area
navigation		
MDA - minimum descent altitude		
Part 77 - Title 14 Code of Federal Regula	tions (CFR) Part 77, Safe, Efficient Use and	Preservation of the
Navigable Airspace		

The proposed Grover Hill wind turbine project near Grover Hill, OH consists of 27 wind turbines and has been reviewed by the FAA under ASNs 2021-WTE-132-OE sequentially through 2021-WTE-158-OE. The proposed wind turbine project lies approximately between 2.2 NM north northwest counterclockwise to 2.1 NM southwest from the town of Grover Hill, OH.

For the sake of efficiency, the 27 proposed wind turbines in this project that have similar impacts to 14 CFR Part 77 standards are included in this narrative.

1. PROPOSAL DESCRIPTION

The Aeronautical Study Number (ASNs), Structure Names, Above Ground Level (AGL) heights, Above Mean Sea Level (AMSL) heights and coordinates for each proposed structure are listed as follows:

ASN	Structure Name	AGL/AMSL	LAT/LONG
2021-WTE-132-OE	/ 20210129-11 /	656 / 1381 /	41-02-39.16N / 84-30-35.30W
2021-WTE-133-OE	/ 20210129-12 /	656 / 1380 /	41-02-34.48N / 84-30-15.14W
2021-WTE-134-OE	/ 20210129-13 /	656 / 1376 /	41-02-24.96N / 84-30-07.54W
2021-WTE-135-OE	/ 20210129-14 /	656 / 1377 /	41-02-12.42N / 84-30-01.05W
2021-WTE-136-OE	/ 20210129-15 /	656 / 1380 /	41-02-12.09N / 84-29-25.08W
2021-WTE-137-OE	/ 20210129-16 /	656 / 1379 /	41-02-09.99N / 84-28-57.10W
2021-WTE-138-OE	/ 20210129-17 /	656 / 1383 /	41-01-47.59N / 84-30-28.07W
2021-WTE-139-OE	/ 20210129-22 /	656 / 1381 /	41-01-47.39N / 84-29-10.01W
2021-WTE-140-OE	/ 20210129-25 /	656 / 1381 /	41-01-35.08N / 84-29-00.37W
2021-WTE-141-OE	/ 20210129-26 /	656 / 1381 /	41-01-50.39N / 84-28-56.14W
2021-WTE-142-OE	/ 20210129-27 /	656 / 1386 /	41-00-53.14N / 84-30-34.67W
2021-WTE-143-OE	/ 20210129-28 /	656 / 1384 /	41-00-53.49N / 84-30-06.23W

2021-WTE-144-OE	/	20210129-29	/	656	/	1386	/	41-00-35.59N	/	84-30-30.57W
2021-WTE-145-OE	/	20210129-30	/	656	/	1384	/	41-00-34.70N	/	84-30-06.47W
2021-WTE-146-OE	/	20210129-31	/	656	/	1386	/	41-00-35.52N	/	84-29-22.91W
2021-WTE-147-OE	/	20210129-32	/	656	/	1383	/	41-00-37.96N	/	84-28-54.19W
2021-WTE-148-OE	/	20210129-33	/	656	/	1382	/	41-00-54.25N	/	84-28-07.10W
2021-WTE-149-OE	/	20210129-34	/	656	/	1381	/	41-00-44.49N	/	84-28-08.43W
2021-WTE-150-OE	/	20210129-35	/	656	/	1383	/	41-00-32.56N	/	84-28-12.16W
2021-WTE-151-OE	/	20210129-36	/	656	/	1382	/	41-00-30.53N	/	84-27-51.17W
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	,									
2021-WTE-152-OE	/	20210129-37	/	656	/	1389	/	40-59-38.09N	/	84-30-28.20W
2021-WTE-152-OE 2021-WTE-153-OE	 	20210129-37 20210129-38	/	656 656	/	1389 1384	 	40-59-38.09N 40-59-57.53N	/	84-30-28.20W 84-29-11.57W
2021-WTE-152-OE 2021-WTE-153-OE 2021-WTE-154-OE	, 	20210129-37 20210129-38 20210129-39	 	656 656 656	 	1389 1384 1384	 	40-59-38.09N 40-59-57.53N 41-02-39.83N	 	84-30-28.20W 84-29-11.57W 84-30-05.48W
2021-WTE-152-OE 2021-WTE-153-OE 2021-WTE-154-OE 2021-WTE-155-OE	 	20210129-37 20210129-38 20210129-39 20210129-40	 	656 656 656 656	 	1389 1384 1384 1382	 	40-59-38.09N 40-59-57.53N 41-02-39.83N 41-02-28.32N	 	84-30-28.20W 84-29-11.57W 84-30-05.48W 84-30-35.47W
2021-WTE-152-OE 2021-WTE-153-OE 2021-WTE-154-OE 2021-WTE-155-OE 2021-WTE-156-OE	 	20210129-37 20210129-38 20210129-39 20210129-40 20210129-41		656 656 656 656 656	 	1389 1384 1384 1382 1380	 	40-59-38.09N 40-59-57.53N 41-02-39.83N 41-02-28.32N 41-01-48.86N	 	84-30-28.20W 84-29-11.57W 84-30-05.48W 84-30-35.47W 84-29-26.86W
2021-WTE-152-OE 2021-WTE-153-OE 2021-WTE-154-OE 2021-WTE-155-OE 2021-WTE-156-OE 2021-WTE-156-OE	 	20210129-37 20210129-38 20210129-39 20210129-40 20210129-41 20210129-42		656 656 656 656 656 656	///////////////////////////////////////	1389 1384 1384 1382 1380 1384		40-59-38.09N 40-59-57.53N 41-02-39.83N 41-02-28.32N 41-01-48.86N 41-00-44.10N		84-30-28.20W 84-29-11.57W 84-30-05.48W 84-30-35.47W 84-29-26.86W 84-30-05.63W

2. 14 CFR PART 77 OBSTRUCTION STANDARDS EXCEEDED

The following proposed turbines would exceed 14 CFR Part 77 standards as described below.

a. Section 77.17(a)(1): Exceeds a height of 499 feet AGL at the site of the object. All proposed structures would exceed this surface by 157 feet.

b. Section 77.17(a)(4) -- A height within an en route obstacle clearance area, including turn and termination areas, of a Federal Airway or approved off-airway route, that would increase the IFR en route minimum obstacle clearance altitude.

The following proposed structures would have the following effect: HUUVR ONE ARRIVAL (RNAV) Increase Minimum Obstruction Clearance Altitude (MOCA) from MSKTS to JJUST from 2300 feet to 2400 feet AMSL. (Procedure serves Akron Fulton International Airport (KAKR), Akron-Canton Regional Airport (KCAK), and Kent State University (1G3)).

2021-WTE-140-OE 2021-WTE-142-OE 2021-WTE-143-OE 2021-WTE-144-OE 2021-WTE-145-OE 2021-WTE-146-OE 2021-WTE-147-OE 2021-WTE-148-OE 2021-WTE-149-OE 2021-WTE-150-OE 2021-WTE-151-OE 2021-WTE-151-OE 2021-WTE-153-OE 2021-WTE-153-OE 2021-WTE-158-OE

3. EFFECT ON AERONAUTICAL OPERATIONS

a. Section 77.29 (a)(1): the impact on arrival, departure, and en route procedures for aircraft operating under visual flight rules.

At 656 feet AGL, all structures would extend into airspace normally utilized for VFR en route flight by 157 feet. The structures would be located within 2 statute miles of a VFR Route (Prairie Creek) as defined by FAAO 7400.2, Section 6-3-8 and would have an adverse effect upon VFR air navigation.

b. Section 77.29 (a)(6); potential effect on ATC radar, direction finders, ATC tower line-of-sight visibility, and physical or electromagnetic effects on air navigation, communication facilities, and other surveillance systems.

The FAA found that all 27 proposed wind turbines would have a Radar Line of Sight (RLOS) impact to the Airport Surveillance Radar (ASR) -9 at Fort Wayne, IN (FWA). Since they are visible to the ASR, they could cause unwanted primary-only returns (clutter) and primary-only target drops, all in the immediate area of the turbines. Also, tracked primary-only targets could diverge from the aircraft path and follow wind turbines, when the aircraft is over or near the turbines.

No effect will occur on the Secondary (Beacon) Radar System.

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment under ASN 2021-WTE-140-OE on 02 June 2021. No comments were received by 09 July 2021. MOCA adverse effects were not circularized to the public for comments because the effect to the MOCAs identified above only requires an internal review from the FAA Air Traffic Control facility.

5. BASIS FOR DECISION

Study for possible VFR effect disclosed that the proposed structures would have no effect on any existing or proposed arrival or departure VFR operations or procedures. The proposed structures would be located beyond the normal traffic pattern airspace for any known public use or military airports. At 656 feet AGL, the structures would be located within the altitudes commonly used for en route VFR flight. In coordination with ATC, an analysis of potential VFR Routes and available traffic data indicated that an average of less than one VFR aircraft per day may be affected by the proposed wind farm. In accordance with FAAO 7400.2, the proposed wind farm would not affect a significant volume of aircraft and therefore, it is determined they will not have a substantial adverse effect on en route VFR flight operations.

The aeronautical study disclosed that the proposed structures would have an effect on a MOCA. MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VHF Omnidirectional Radio Range (VOR) navigational facility. Structures that only affect the MOCA are not considered to have a substantial adverse effect and only require a review by the ATC facility. A review by the controlling facility determined that increasing the MOCA altitudes would ensure the required obstacle clearances are maintained and therefore would not have a substantial adverse effect on air traffic operations. There are no other impacts to existing or proposed arrival, departure, or en route IFR operations or procedures.

The proposed turbine(s) would be charted on VFR sectional aeronautical charts and appropriately obstruction marked/lighted to make them more conspicuous to airmen should circumnavigation be necessary.

The cumulative impact of the proposed structure(s), when combined with other proposed and existing structures, is not considered to be significant. Study did not disclose a substantial adverse effect on existing or proposed public-use or military airports, nor does the proposal(s) affect the capacity of any known existing or planned public-use or military airport. There are no substantial physical or electromagnetic effects on the operation of air navigation and communications facilities and there are no effects on any airspace and routes used by the military.

6. DETERMINATION - NO HAZARD TO AIR NAVIGATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on any air navigation facility and would not be a hazard to air navigation provided the conditions set forth in this determination are met.

7. CONDITIONS

The proponent is required to file FAA form 7460-2, part 1, Notice of Actual Construction or Alteration, sixty days prior to beginning construction, at the OE/AAA website (http://oeaaa.faa.gov) for the following wind turbines reviewed as ASNs:

2021-WTE-140-OE 2021-WTE-142-OE 2021-WTE-143-OE 2021-WTE-144-OE 2021-WTE-145-OE 2021-WTE-146-OE 2021-WTE-147-OE 2021-WTE-148-OE 2021-WTE-149-OE 2021-WTE-150-OE 2021-WTE-151-OE 2021-WTE-151-OE 2021-WTE-153-OE 2021-WTE-153-OE 2021-WTE-153-OE

Additionally, within five days after each project structure reaches its greatest height, the proponent is required to file a FAA form 7460-2, Actual Construction notification, at the OE/AAA website (http://oeaaa.faa.gov). This actual construction notification will be the source document detailing the site location, site elevation, structure height, and date structure was built for the FAA to map the structure on aeronautical charts and update the national obstruction database.

TOPO Map for ASN 2021-WTE-157-OE



Sectional Map for ASN 2021-WTE-157-OE



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Summary: Correspondence from ODOT Office of Aviation electronically filed by Mr. Andrew S. Conway on behalf of Staff of the OPSB.