From:	Puco ContactOPSB
To:	Puco Docketing
Subject:	public comment 17-2295-EL-BGN
Date:	Monday, September 30, 2019 10:30:13 AM
Attachments:	6-28-19 Turbine models proposed Republic Wind.png shadow flicker 6-28-19.png image001.png image002.png

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Please file the email below and the three attachments as public comments in 17-2295-EL-BGN. Thanks!

From: Deb H <hayyou87@gmail.com>
Sent: Saturday, September 28, 2019 10:19 AM
To: Butler, Matthew <matthew.butler@puco.ohio.gov>
Subject: Fwd: Misleading shadow flicker reports for Republic Wind LLC, case#17-2295-EL-BGN

Matt
Please include this email as a public comment for Republic Wind LLC Case #17-2295-EL-BGN
Regards, Deb Hay
---------- Forwarded message ---------
From: **Deb H** <hayyou87@gmail.com>
Date: Sat, Sep 28, 2019 at 9:53 AM
Subject: Misleading shadow flicker reports for Republic Wind LLC, case#17-2295-EL-BGN
To: Rep. Bill Reineke <rep88@ohiohouse.gov>, State Senator Dave Burke <Burke@ohiosenate.gov>
Cc: Rep. Bill Seitz <rep30@ohiohouse.gov>, <Michelle.Gillcrist@governor.ohio.gov>, <Samuel.randazzo@puco.ohio.gov>, Rep. Dick Stein <Rep57@ohiohouse.gov>, <rep85@ohiohouse.gov>, <mkerschner@senecacountyohio.gov>, <aparadiso@senecacountyohio.gov>

Date: September 28th 2019
Representative Bill Reineke and Senator Dave Burke

Many homes will be affected by shadow flicker in the Republic Wind Project with the 602 ft. turbines which were added in an amendment along with a new configuration of turbine placement in 12/2018. Although Apex appeared to use the correct turbine placement in their 12/2018 shadow flicker report, they still used the shorter 591 Ft. turbine in that report which was misleading.

That 12/2018 Shadow Flicker Report can be found here.
http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=25280037-f910-4706-906d-25be0a05d0bd

On June 28th 2019 Apex submitted an amendment changing the turbine models and reports. No public meeting was held to inform the public of these amendments. The shadow flicker report is particularly disturbing. Apex reportedly did not change the configuration of the turbine locations from the 12/2018 amendment, but that is not true. They indeed did use another configuration of turbine placement for the 6/28/19 report. In addition Apex used the smallest turbine added with

their 6/28/19 amendment which was the Vestas-136 at 492' in height rather than the tallest turbine, the Nordex-149 at 602' in height.

The 6/28/19 Shadow Flicker report can be found here:
http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=ab660ddb-d0b7-4550-9813-91f0267ae4d1

The picture below depicts the misleading methods used in the 6/28/19 report.

To:	Dalton Carr, John Arehart	**EDR Project No:**	15095
From:	Lindsay Donahoe		
Date:	June 19, 2019		
Reference:	Republic Wind Farm Case No. 17-2295-EL-BGN Updated Shadow Flicker Analysis		

Introduction

This memorandum report presents the findings of the updated shadow flicker analysis for the Republic Wind Farm (the Project; OPSB Case No. 17-2295-EL-BGN). As originally presented in the Application Amendment filed by Republic Wind, LLC (the Applicant), the Project consisted of up to 50 turbines with a maximum rotor diameter of 150 meters (492 feet). The Project layout has not changed and remains as presented in the Application Amendment. However, the list of turbine models under consideration for the Project has been expanded to include the Vestas V136 3.6 megawatt (MW) turbine. The V136 turbine has a rotor diameter of 136 meters (446 feet) and a hub height of 82 meters (269 feet) for a maximum total height of 150 meters (492 feet). Potential shadow flicker effects have been re-analyzed to account for the change in turbine dimension.

Shadow flicker refers to the shadows that a wind turbine casts over structures and observers at times of the day when the sun is directly behind the turbine rotor from an observer's position. During intervals of sunshine, operating wind turbine generators will cast a shadow on surrounding areas as the rotor blades pass in front of the sun, causing a flickering effect while the rotor is in motion. Shadow flicker is most pronounced in northern latitudes during winter months because of the lower angle of the sun in the winter sky. However, it is possible to encounter shadow flicker anywhere for brief periods after sunrise and before sunset (U.S. Department of the Interior, 2005). Shadow flicker does not occur when fog or clouds obscure the sun, or when turbines are not operating. Obstacles such as terrain, vegetation, and/or buildings occurring between residences and wind turbines can significantly reduce or eliminate shadow flicker effects.

The location and duration of shadow flicker can be predicted using computer modeling programs and input data regarding turbine locations, turbine dimensions, receptor locations, local topography, and sunshine frequency. A conservative assumption that the turbines are in continuous operation is also applied. Shadow flicker effects predicted by the modeling exercise are expressed in terms of frequency (hours per year) at each receptor location.

Methods

This updated shadow flicker analysis evaluated the potential impact of 50 Vestas V136-3.6 MW turbines, each with a rotor diameter of 136 meters and a hub height of 82 meters. Prior to conducting the shadow-flicker analysis, the Applicant identified potential receptors in the vicinity of the Project. Consistent with the Republic Wind Farm Shadow Flicker Report (EDR, 2018) a study area of 10 rotor diameters was used for analysis of shadow-flicker effects. In the case of the Vestas V136 turbine used in this analysis, 10 rotor diameters equals 1,360 meters (4,462 feet). Consequently, a Study Area of 1,360 meters was used for the analysis (Figure 1).

The turbine models/sizes/capacity were updated in the 6-28-19 amendment. They are pictured below and can be found here:
http://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=ab660ddb-d0b7-4550-9813-91f0267ae4d1

NOTICE OF PROJECT MODIFICATIONS AND INFORMATION UPDATE

An application for a Certificate of Environmental Compatibility and Public Need (the "Certificate Application") for the Republic Wind Farm (the "Project") was submitted to the Ohio Power Siting Board (OPSB) on February 2, 2018 by Apex Clean Energy (the "Applicant"). On December 26, 2018, the Applicant filed an amendment to its Certificate Application. Turbine models and dimensions under consideration for the Project at the time of the Certificate Application amendment are listed below in Table 1.

Table 1. Approximate Turbine Dimensions by Model

Turbine Model	Rated Power	Hub Height	Rotor Diameter	Maximum Total Height
Vestas V150	4.2 MW	105 meters (344 feet)	150 meters (492 feet)	180 meters (591 feet)
Siemens SG145	4.5 MW	107.5 meters (352 feet)	145 meters (476 feet)	180 meters (591 feet)
Nordex N149	4.5 MW	109 meters (357 feet)	149 meters (489 feet)	183.5 meters (602 feet)

Wind Turbine Updates

Since the December 2018 submittal, Vestas has released a V150 5.6 megawatt (MW) turbine and Nordex has released N149 4.8, 5.5, and 5.7 MW turbines. For economic reasons, the Applicant is considering the up-rated Vestas V150 and Nordex N149 turbines in addition to the models that were presented in the December 2018 submittal. While there is a change in turbine capacity (from 4.2 MW to 5.6 MW for the V150 and from 4.5 MW to 4.8, 5.5, or 5.7 MW for the N149), the turbine dimensions remain the same as presented in Table 1 above.

The Applicant is also adding the Vestas V136-3.6 MW turbine model for consideration for the Project. The turbine has a rotor diameter of 136 meters (446 feet) and a hub height of 82 meters (269 feet), resulting in a total height of 150 meters (492 feet). This turbine model is smaller than all of the other turbine models evaluated in the December 2018 Certificate Application. The use of the V136 will be limited to no more than 10 locations within the Project.

There is no change to the currently proposed turbine locations, and the total generating capacity of the Project remains unchanged and will not exceed 200 MW.

These deceptive reports were accepted by the OPSB and not questioned in the July 2019 OPSB Staff report. Amazingly, Apex found that 77 fewer homes were now impacted in their June 2019 Shadow Flicker Report and bragged about that in their submission.

This is just one more reason local communities should have the right to a referendum in regards to accepting these massive structures into their communities. These out of state companies and foreign investors appear to have no interest in working with non-participating property owners and the OPSB has done little to inform and protect the public interest in these cases.

Please tell the OPSB that those impacted by the Republic Wind LLC Case #17-2295-EL-BGN deserve to have another public meeting and hearing. We deserve to be accurately informed and all those impacted by the project deserve accurate information ahead of public hearings. Those legally intervening in the project deserve a voice at the public hearings just as leaseholders represented by Apex lawyers at the public hearings were allowed to speak.

Sincerely, Deb Hay
Thompson Twp., Seneca County OH

CC:

Samuel Randazzo, Chairman of the PUCO
Michelle Gilchrest, Northern Ohio Liaison to Governor DeWine
William Seitz, Ohio House Majority Leader
Dick Stein, Ohio House Representative
Nino Vitale, Ohio House Representative
Anthony Paradiso, Seneca County Commissioner
Mike Kerschner, Seneca County Commissioner

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Deb

From:	Puco ContactOPSB
To:	Puco Docketing
Subject:	public comment 17-2295-EL-BGN
Date:	Monday, September 30, 2019 11:57:27 AM
Attachments:	Official letter from Dr. Punch.pdf

Please file this email and the attachment in the public comments for case number 17-2295-EL-BGN. Thank you.

From: Jim <ssgdillingham@gmail.com>
Sent: Monday, September 30, 2019 11:38 AM
To: Gillcrist, Michelle <Michelle.Gillcrist@governor.ohio.gov>
Cc: Rep88@ohiohouse.gov; rep57@ohiohouse.gov; rep30@ohiohouse.gov; burke@ohiosenate.gov; Randazzo, Samuel <Samuel.Randazzo@puco.ohio.gov>; Butler, Matthew <matthew.butler@puco.ohio.gov>
Subject: Misleading shadow flicker reports for Republic Wind LLC, case#17-2295-EL-BGN

Greetings Governor DeWine,

My name is Jim Dillingham, a retired United States Army Senior Noncommissioned Officer with 22 years of honorable service to our Nation. I have a Veterans Affairs determined disability rating of 70% and am now faced with the unwanted choice of relocating my family, all based on my medical condition should the Seneca or Republic Wind Turbine projects (surrounding my residence) move forward. One of the major disabilities I live with, determined by the VA, is "chronic vertigo". This life altering condition occurred in July of 2000 and I continue to suffer from this disability to this day.

I offer these facts and ask that you consider not only my situation, but those of all non-participating residents affected by these projects and how it will affect our health, welfare, and daily living conditions. Through my own research on medical issues associated with wind turbines, I've been in direct contact with Dr. Jerry Punch, an audiologist and Professor Emeritus at Michigan State to gain his professional opinion on the issue (a copy of his letter written on my behalf is attached). The topics I face with my condition include, but are not limited to, shadow-flicker and infrasound.

I urge you to consider the information discussed within Dr. Punch's letter, coupled with the World Health Organization's report on Environmental Noise, and put a stop to the inaccurate information being published by APEX in regards to turbine height and the amount of shadow flicker we non-participating residence will be subject to. Constructing 600+ foot turbines in such close proximity of residential homes will only lead to adverse living and health conditions for us residents.

Thank you for your attention in this extremely important matter.

Respectfully,

Jim Dillingham

CC
Representative Bill Reineke
Representative Dick Stein
Representative Bill Seitz
Senator Dave Burke
Samuel Randazzo, PUCO Chairman
Matthew Butler, PUCO Public Affairs

From:	Puco ContactOPSB
To:	Puco Docketing
Subject:	for public comments in 17-2295
Date:	Monday, September 30, 2019 1:49:17 PM

From: Gregg Jess <3025.home@gmail.com>
Sent: Monday, September 30, 2019 12:33 PM
To: Gillcrist, Michelle <Michelle.Gillcrist@governor.ohio.gov>; rep88@ohiobouse.gov; rep57@ohiohouse.gov; rep30@ohiohouse.gov; burks@ohiosensta.gov; Randazzo, Samuel <Samuel.Randazzo@puco.ohio.gov>; Butler, Matthew <matthew.butler@puco.ohio.gov>
Subject: Apex and Republic wind

Apex has manipulated the system, O.P.S.B, the PUCO, Ohio government, and the Ohio county's residents. On June 28th 2019 Apex submitted an amendment changing the turbine models and reports. No public meeting was held to inform the public of these amendments. The shadow flicker report is particularly disturbing. Apex reportedly did not change the configuration of the turbine locations from the 12/2018 amendment, but that is not true. They indeed did use another configuration of turbine placement for the 6/28/19 report. In addition Apex used the smallest turbine added with their 6/28/19 amendment which was the Vestas-136 at 492' in height rather than the tallest turbine, the Nordex-149 at 602' in height. Does anyone or any goverment group (there are a few,not enough) care enough to intervene, or stop this misleading developer. Their high priced legal group is in control. We the people do not have the resources to defend ourselves. Apex and its lawyers have been deceiving and manipulating the facts. Will the State of Ohio be there if our water supply is compromised, health problems arise from shadow flicker or noise polution,etc? Who will accept responsibility? Please feel free to contact me. We need your support. PUCO Case No=17-2295 For your reference Thank you for your attention in this matter.

This foregoing document was electronically filed with the Public Utilities

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10/1/2019 3:11:54 PM

in

Case No(s). 17-2295-EL-BGN

Summary: Public Comment electronically filed by Docketing Staff on behalf of Docketing