

# Wind Power GeoPlanner™

## Off-Air TV Analysis

Agricola Wind



Prepared on Behalf of  
Liberty Renewables Inc.

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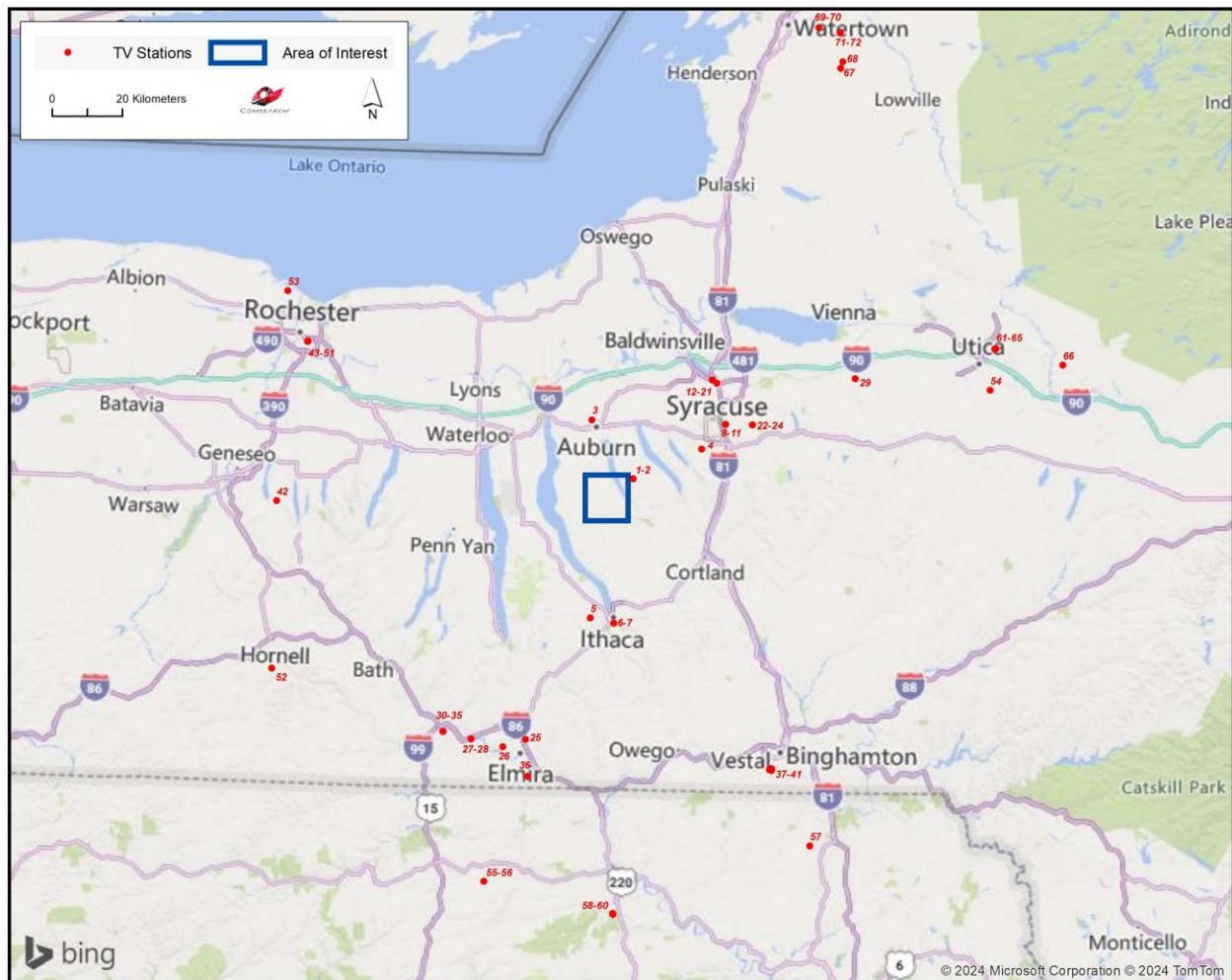
Off-air television stations broadcast signals from terrestrially-based facilities directly to television receivers. Comsearch identified those off-air stations whose service could potentially be affected by the proposed Agricola Wind Project in Cayuga County, New York (the Project). Comsearch then examined the coverage of the stations and the communities in the area that could potentially have degraded television reception due to the location of the proposed wind turbines.

The proposed Agricola Project Area (the Project Area) and local communities are depicted below in Figure 1. The Project Area is defined as the rectangular area with a minimum of a 2-mile buffer from all turbine locations as noted in Figures 1 and 2.





To begin the analysis, Comsearch compiled all off-air television stations<sup>1</sup> within 150 kilometers of the project area of interest (AOI). TV stations at a distance of 150 kilometers or less are the most likely to provide off-air coverage to the Project Area and neighboring communities. These stations are listed in Table 1 and a plot depicting their locations is provided in Figure 2. There are a total of 72 database records for stations within approximately 150 kilometers of the project AOI. Of these stations, 65 stations are currently licensed and operating, 28 of which are low-power stations or translators. Translator stations are low-power stations that receive signals from distant broadcasters and retransmit the signal to a local audience. These stations serve local audiences and have limited range, which is a function of their transmit power and the height of their transmit antenna.



*Figure 2: Plot of Off-Air TV Stations within 150 Kilometers of Project Area*

<sup>1</sup> Comsearch makes no warranty as to the accuracy of the data included in this report beyond the date of the report. The data presented in this report is derived from the TV station's FCC license and governed by Comsearch's data license notification and agreement located at [http://www.comsearch.com/files/data\\_license.pdf](http://www.comsearch.com/files/data_license.pdf).

ID	Call Sign	Status	Service <sup>2</sup>	Channel	Transmit ERP <sup>3</sup> (kW)	Latitude (NAD 83)	Longitude (NAD 83)	Distance to the Closest Turbine (km)
1	WNYI	LIC	DTV	13	28.0	42.801444	-76.436889	7.12
2	WDSS-LD	LIC	LPD	13	28.0	42.801444	-76.436889	7.12
3	WNDR-LD	LIC	LPD	32	2.0	42.951389	-76.584444	19.38
4	WSYT	LIC	DTV	14	540.0	42.880611	-76.199639	28.13
5	W34FR-D	LIC	LPT	34	15.0	42.441722	-76.577500	31.12
6	WNYS-CD	LIC	DCA	16	1.7	42.429778	-76.496583	32.54
7	WSKG-TV	CP	DRT	33	15.0	42.429778	-76.496556	32.54
8	NEW	CP	DTV	15	475.0	42.944944	-76.118389	37.51
9	WTVH	LIC	DTV	18	109.0	42.944944	-76.118389	37.51
10	WSTM-TV	LIC	DTV	19	150.0	42.944944	-76.118389	37.51
11	WCNY-TV	LIC	DTV	20	62.0	42.944944	-76.118389	37.51
12	WVOA-LD	LIC	LPD	6	2.75	43.058333	-76.166389	42.95
13	WVOA-LD	LIC	LPD	6	2.75	43.058333	-76.166389	42.95
14	WVOA-LD	STA	LPD	6	2.75	43.058333	-76.166389	42.95
15	WBLZ-LD	LIC	LPD	22	12.5	43.058333	-76.166389	42.95
16	WHSU-CD	LIC	DCA	23	9.5	43.058333	-76.166389	42.95
17	WONO-CD	LIC	DCA	24	15.0	43.058333	-76.166389	42.95
18	WTVU-CD	LIC	DCA	25	15.0	43.058333	-76.166389	42.95
19	WMJQ-CD	LIC	DCA	27	12.0	43.058333	-76.166389	42.95
20	WWLF-LD	LIC	LPD	35	5.0	43.058333	-76.166389	42.95
21	W16EA-D	LIC	LPD	16	12.3	43.050056	-76.150750	43.17
22	WSYR-TV	CP	DTV	17	285.0	42.945000	-76.024167	44.13
23	WSYR-TV	LIC	DTV	17	105.0	42.945000	-76.024167	44.13

<sup>2</sup> Definitions of service and status codes:

ACA - Analog Class A

DCA - Digital Class A

DRT - Digital Replacement Translator

DT - ETL testing

DTS - Distributed Transmission System

DTV - Full Service Television

DTX - Digital TV Auxiliary

LPA - Low Power Analog TV

LPD - Low Power Digital TV

LPT - Digital TV Translator

LPX - Analog TV Translator

TS - Legacy Service for Analog TV Auxiliary

TV - Analog TV legacy

LIC – Licensed and operational station

CP – Construction permit granted

CP MOD – Modification of construction permit

APP – Application for construction permit, not yet operational

STA – Special transmit authorization, usually granted by FCC for temporary operation

AMD - Amendment

<sup>3</sup> ERP = Transmit Effective Radiated Power

ID	Call Sign	Status	Service <sup>2</sup>	Channel	Transmit ERP <sup>3</sup> (kW)	Latitude (NAD 83)	Longitude (NAD 83)	Distance to the Closest Turbine (km)
24	WSPX-TV	LIC	DTV	36	82.0	42.945000	-76.024167	44.13
25	W26BF-D	LIC	LPD	26	5.0	42.126667	-76.793056	69.11
26	WETM-TV	LIC	DTV	23	265.0	42.106111	-76.871111	73.41
27	W17EJ-D	APP	LPD	17	0.1	42.125056	-76.981028	75.34
28	W17EJ-D	CP	LPD	17	0.1	42.125056	-76.981028	75.34
29	WTKO-CD	LIC	DCA	32	15.0	43.065889	-75.667389	76.14
30	WSKA	LIC	DTV	25	50.0	42.142000	-77.077444	77.88
31	WYDC	LIC	DTV	30	55.0	42.142000	-77.077444	77.88
32	WENY-TV	LIC	DTV	35	145.0	42.142000	-77.077444	77.88
33	WJKP-LD	LIC	LPD	14	3.0	42.141944	-77.077500	77.89
34	W15EG-D	LIC	LPD	15	4.0	42.141944	-77.077500	77.89
35	WECY-LD	LIC	LPD	19	0.8	42.141944	-77.077500	77.89
36	W29EZ-D	LIC	LPD	29	0.776	42.031944	-76.783611	79.02
37	WBNG-TV	LIC	DTV	8	23.8	42.058611	-75.951389	87.49
38	WSKG-TV	LIC	DTV	31	40.2	42.061167	-75.945611	87.49
39	WBGH-CD	LIC	DCA	20	0.04	42.060833	-75.943056	87.64
40	WIVT	LIC	DTV	27	298.0	42.060833	-75.943056	87.64
41	WICZ-TV	LIC	DTV	7	28.0	42.056111	-75.943889	88.05
42	W17ED-D	LIC	LPD	17	1.0	42.723167	-77.675739	91.08
43	WHAM-TV	LIC	DTV	9	30.0	43.135278	-77.583889	92.43
44	WXXI-TV	LIC	DTV	22	273.0	43.135278	-77.583889	92.43
45	WHEC-TV	LIC	DTV	10	18.1	43.135639	-77.583694	92.43
46	WROC-TV	LIC	DTV	21	1000.0	43.135639	-77.583694	92.43
47	WGCE-CD	LIC	DCA	26	15.0	43.134861	-77.584917	92.48
48	WUHF	APP	DTV	28	320.0	43.134861	-77.584917	92.48
49	WUHF	LIC	DTV	28	320.0	43.134861	-77.584917	92.48
50	WBGH-CD	LIC	DCA	29	15.0	43.135278	-77.585000	92.51
51	WAWW-LD	LIC	LPD	30	15.0	43.135278	-77.585000	92.51
52	W19ET-D	LIC	LPD	19	0.8	42.292222	-77.673889	104.43
53	WNIB-LD	LIC	LPD	11	3.0	43.263139	-77.659639	104.61
54	WVVC-LD	LIC	LPD	33	15.0	43.037472	-75.195417	110.93
55	W20CP-D	LIC	LPT	20	2.3	41.759500	-76.924944	111.31
56	W26CV-D	LIC	LPT	26	0.098	41.759500	-76.924944	111.31
57	W32FP-D	LIC	LPD	32	2.5	41.863694	-75.809639	112.09
58	W20EI-D	LIC	LPT	20	3.6	41.683786	-76.482975	115.26
59	W10CP-D	LIC	LPT	10	0.066	41.681167	-76.481583	115.56
60	W15CO-D	LIC	LPT	15	0.034	41.681167	-76.481583	115.56
61	WWDG-CD	LIC	DCA	28	10.2	43.144167	-75.178889	116.04
62	W22DO-D	LIC	LPT	22	1.55	43.143889	-75.177500	116.14
63	WUTR	LIC	DTV	30	50.0	43.145278	-75.176111	116.30
64	WPNY-LD	LIC	LPD	11	0.16	43.144750	-75.175611	116.32
65	WFXV	LIC	DTV	34	1000.0	43.144750	-75.175611	116.32

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66	WKTV	LIC	DTV	29	708.0	43.102500	-74.940556	132.88
67	WPBS-DT	LIC	DTV	26	98.0	43.862778	-75.727222	136.81
68	WWTI	LIC	DTV	31	31.1	43.879722	-75.719722	138.75
69	WTKJ-LD	LIC	LPD	19	1.5	43.967944	-75.805889	144.43
70	WVNC-LD	LIC	LPD	24	15.0	43.967944	-75.805889	144.43
71	WWNY-TV	LIC	DTV	8	50.0	43.954167	-75.728889	145.72
72	WNYF-CD	LIC	DCA	35	15.0	43.954167	-75.728889	145.72

*Table 1: Off-Air TV Stations within 150 Kilometers of Project Area*

### 3. Impact Assessment

Based on a contour analysis of the licensed stations within 150 kilometers of the Project Area, it was determined that sixteen of the full-power digital stations, identified below in Table 2, along with three low-power digital stations, may have their reception disrupted in and around the Project. The areas primarily affected would include TV service locations within 10 kilometers of the Project that have clear line-of-sight (LOS) to a proposed wind turbine but not to the respective station. After the wind turbines are installed, communities and homes in these locations may have degraded reception of these stations. This is due to multipath interference caused by signal scattering as TV signals are reflected by the rotating wind turbine blades and mast.

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2	WDSS-LD	LIC	LPD	13	28.0	42.801444	-76.436889	7.12
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31	WYDC	LIC	DTV	30	55.0	42.142000	-77.077444	77.88
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41	WICZ-TV	LIC	DTV	7	28.0	42.056111	-75.943889	88.05
43	WHAM-TV	LIC	DTV	9	30.0	43.135278	-77.583889	92.43
45	WHEC-TV	LIC	DTV	10	18.1	43.135639	-77.583694	92.43

*Table 2: Licensed Off-Air TV Stations Subject to Degradation*

## 4. Recommendations

While TV signals are reflected by wind turbines, which can cause multipath interference to the TV receiver, modern digital TV receivers have undergone significant improvements to mitigate the effects of signal scattering. When used in combination with a directional antenna, it becomes even less likely that signal scattering from wind farms will cause interference to digital TV reception.

Nevertheless, signal scattering could still impact certain areas currently served by the TV station mentioned above, especially those that would have line-of-sight to at least one wind turbine but not to the station antenna. In the unlikely event that interference is observed in any of the TV service areas, it is recommended that a high-gain directional antenna be used, preferably outdoors, and oriented towards the signal origin in order to mitigate the interference.

Both cable service and direct broadcast satellite service will be unaffected by the presence of the Agricola Wind Project and may be offered to those residents who can show that their off-air TV reception has been disrupted by the presence of the wind turbines after they are installed.



## **5. Contact**

For questions or information regarding the Off-Air TV Analysis, please contact:

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