



Appendix 20-B
Off Air TV Analysis

Clinton Wind Repowering Project
Matter No. 23-03032

Wind Power GeoPlanner™

Off-Air TV Analysis

Clinton Wind Repowering Project



Prepared on Behalf of
Valcour Clinton NewCo,
LLC

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COMSEARCH
A CommScope Company



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1. Introduction

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 Clinton Wind Repowering Project in Clinton County, New York. 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.

2. Summary of Results

The proposed wind energy project area and local communities are depicted in Figure 1, below.



Figure 1: Wind Farm Project Area and Local Communities

To begin the analysis, Comsearch compiled all off-air television stations¹ 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 Table 2, below, and a plot depicting their locations is provided in Figure 2. There are a total of 41 database records for stations within approximately 150 kilometers of the limits of the project AOI. Of these stations, 36 are currently licensed and operating.

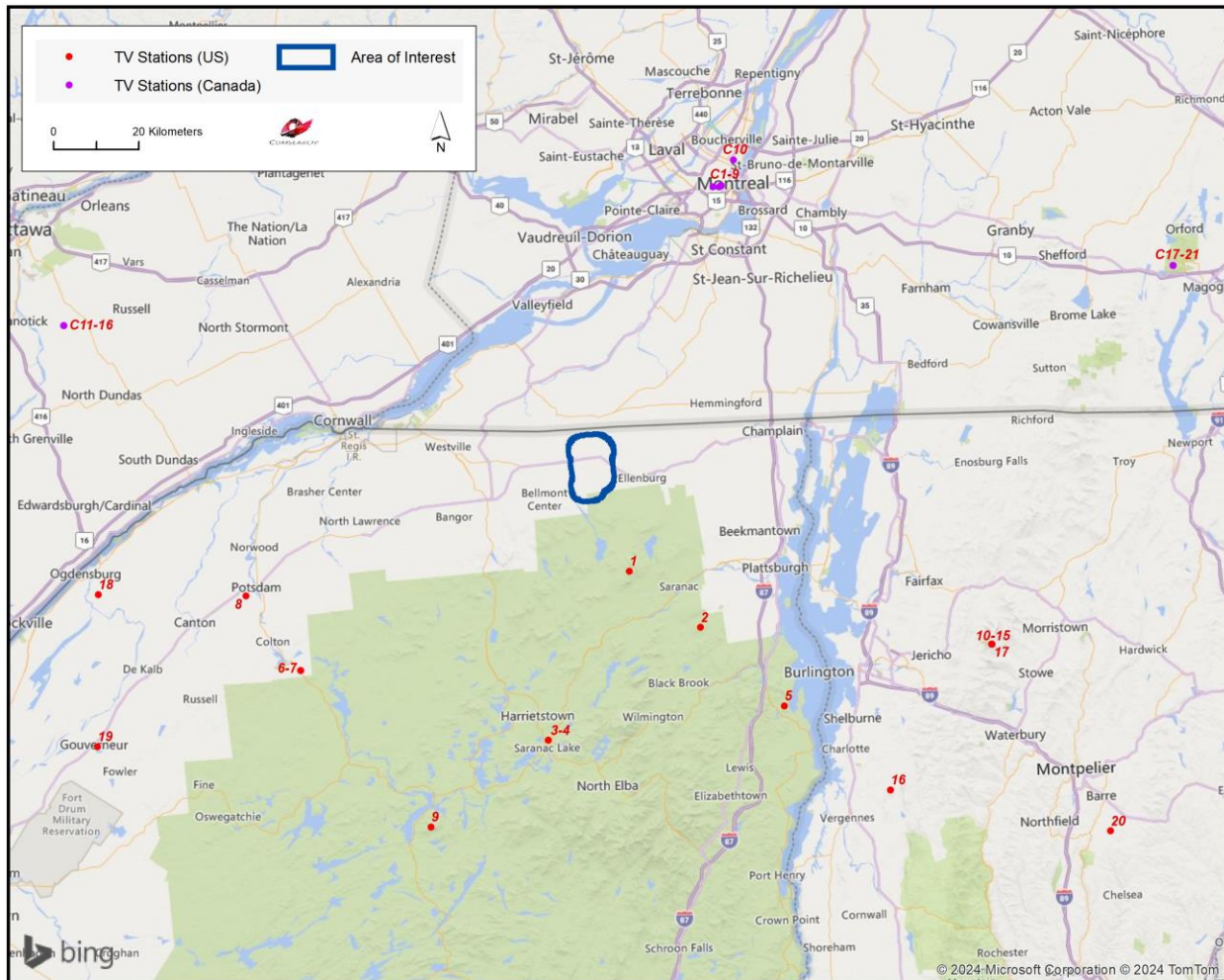


Figure 2: Plot of Off-Air TV Stations within 150 Kilometers of Project Area

¹ 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.

ID	Call Sign	Status	Service ²	Channel	Transmit ERP ³ (kW)	Latitude (NAD 83)	Longitude (NAD 83)	Distance to the Nearest Turbine (km)
1	WCFE-TV	LIC	DTV	36	67.0	44.695278	-73.883056	23.31
2	WYCI	CP	DTS	34	200.0	44.574250	-73.674722	42.81
3	WYCI	LIC	DTV	34	11.4	44.341139	-74.128194	61.69
4	WYCI	CP	DTS	34	11.4	44.341139	-74.128194	61.69
5	W29EW-D	LIC	LPT	29	0.396	44.405361	-73.431472	69.39
6	WWNY-CD	LIC	DCA	18	4.0	44.491389	-74.857222	80.87
7	WNPI-DT	LIC	DTV	23	40.0	44.491389	-74.857222	80.87
8	W26EP-D	LIC	LPD	26	0.075	44.648556	-75.018444	84.72
9	W25AT-D	LIC	LPT	25	0.165	44.159500	-74.474889	89.33
10	WCAX-TV	LIC	DTV	20	423.0	44.525722	-72.815583	100.62
11	WPTZ	STA	DTV	14	559.0	44.525583	-72.815667	100.62
12	WVNY	LIC	DTV	7	14.0	44.525886	-72.815400	100.63
13	WFFF-TV	LIC	DTV	16	40.0	44.525886	-72.815400	100.63
14	WPTZ	STA	DTV	14	250.0	44.525889	-72.815389	100.63
15	WCAX-TV	AMD	DTV	20	273.0	44.525889	-72.815389	100.63
16	W25BT-D	LIC	LPT	25	0.369	44.223361	-73.123722	100.68
17	WETK	LIC	DTV	32	90.0	44.525583	-72.813722	100.76
18	WNGJ-LD	LIC	LPD	20	0.35	44.650000	-75.455833	118.03
19	WNGF-LD	LIC	LPD	9	0.25	44.329722	-75.455556	130.98
20	WVER	LIC	DTS	10	0.1	44.124639	-72.481167	146.39

Table 1: Off-Air TV Stations within 150 Kilometers of Project Area (US)

² 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

² ERP = Transmit Effective Radiated Power

ID	Call Sign	Status	Class ⁴	Channel	Transmit ERP (kW)	Latitude (NAD 83)	Longitude (NAD 83)	Distance to the Nearest Turbine (km)
1	CFTU-DT	OP	R	29	0.910	45.503056	-73.615556	67.29
2	CFHD-DT	OP	R	31	4.030	45.503333	-73.596389	67.97
3	CJNT-DT	OP	R	17	2.070	45.505000	-73.591111	68.32
4	CKMI-DT-1	OP	R	15	8.000	45.505556	-73.591667	68.35
5	CFCF-DT	OP	R	12	10.600	45.505556	-73.591667	68.35
6	CBFT-DT	OP	R	19	372.700	45.505556	-73.591667	68.35
7	CBMT-DT	OP	R	21	363.000	45.505556	-73.591667	68.35
8	CFTM-DT	OP	R	11	11.000	45.505556	-73.591667	68.35
9	CFJP-DT	OP	R	35	17.710	45.505556	-73.591667	68.35
10	CIVM-DT	OP	R	26	269.000	45.559444	-73.552500	75.08
11	CHRO-DT-43	OP	R	35	42.800	45.217222	-75.563611	126.08
12	CITY-DT-3	OP	R	17	5.100	45.216944	-75.563889	126.10
13	CHCH-DT-1	OP	R	22	25.000	45.216944	-75.563889	126.10
14	CJMT-DT-2	OP	R	20	15.000	45.216944	-75.563889	126.10
15	CFMT-DT-2	OP	R	27	15.000	45.216944	-75.563889	126.10
16	CITS-DT-1	OP	R	15	20.600	45.216944	-75.563889	126.10
17	CIVS-DT	OP	R	24	60.000	45.311944	-72.241667	142.22
18	CKMI-DT-2	OP	R	10	0.475	45.311944	-72.241667	142.22
19	CKSH-DT	OP	R	13	32.289	45.311944	-72.241667	142.22
20	CHLT-DT	OP	R	8	4.000	45.311944	-72.241667	142.22
21	CFKS-DT	OP	R	30	4.630	45.311944	-72.241667	142.22

Table 2: Off-Air TV Stations within 150 Kilometers of Project Area (Canada)

⁴ Definitions of class and status codes:
R – Regular VHF Television Broadcast Station
A – NTSC UHF station
OP – Licensed and operational station
TO – Temporary operation
AU – Authorized; not yet operational

3. Impact Assessment

Based on a contour analysis of the licensed stations within 150 kilometers of the Clinton Wind Repowering Project, it was determined that ten of the full-power digital stations, identified below in Table 3 and Table 4, may have their reception disrupted in and around the project. The areas primarily affected would include TV service locations within 10 kilometers of the wind energy 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.

ID	Call Sign	Status	Service ⁵	Channel	Transmit ERP ⁶ (kW)	Latitude (NAD 83)	Longitude (NAD 83)	Distance to the Nearest Turbine (km)
1	WCFE-TV	LIC	DTV	36	67.0	44.695278	-73.883056	23.31
10	WCAX-TV	LIC	DTV	20	423.0	44.525722	-72.815583	100.62
12	WVNY	LIC	DTV	7	14.0	44.525886	-72.815400	100.63
13	WFFF-TV	LIC	DTV	16	40.0	44.525886	-72.815400	100.63
17	WETK	LIC	DTV	32	90.0	44.525583	-72.813722	100.76

Table 3: Licensed Off-Air TV Stations Subject to Degradation (US)

ID	Call Sign	Status	Service ⁷	Channel	Transmit ERP ⁸ (kW)	Latitude (NAD 83)	Longitude (NAD 83)	Distance to the Nearest Turbine (km)
5	CFCF-DT	OP	R	12	10.600	45.505556	-73.591667	68.35
6	CBFT-DT	OP	R	19	372.700	45.505556	-73.591667	68.35
7	CBMT-DT	OP	R	21	363.000	45.505556	-73.591667	68.35
8	CFTM-DT	OP	R	11	11.000	45.505556	-73.591667	68.35
9	CFJP-DT	OP	R	35	17.710	45.505556	-73.591667	68.35

Table 4: Licensed Off-Air TV Stations Subject to Degradation (Canada)

⁵ Definitions of service and status codes:

DT – Digital television broadcast station
LD – Low power digital television broadcast station
LIC – Licensed and operational station

⁶ ERP = Transmit Effective Radiated Power

⁷ Definitions of service and status codes:
DT – Digital television broadcast station
LD – Low power digital television broadcast station
LIC – Licensed and operational station

⁸ ERP = Transmit Effective Radiated Power

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 wind turbine facility 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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