



HIGH RIVER ENERGY CENTER

Case No. 17-F-0597

1001.26 Exhibit 26

Effect on Communications

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Exhibit 26: Effect on Communications

This Exhibit will track the requirements of proposed Stipulation 26, dated August 26, 2019, and therefore, the requirements of 16 NYCRR § 1001.26.

26(a) Existing Broadcast Communication Sources

The Applicant conducted a review of the Project's potential impact on multiple forms of communications technology. The Applicant reviewed Federal Communications Commission (FCC) license data and other appropriate databases to review TV, Radio, Cellular, Microwave radio communications as well as Doppler radar as described below. Additionally, the Applicant is consulting with the Montgomery County Emergency Management Office, the Montgomery County Sheriff's Office, and the New York State Division of Homeland Security & Emergency Services to inform these agencies about the Project and assess effects and concerns regarding potential impacts to emergency services or emergency communications systems.

The Project will lack tall structures and exposed moving parts. The photovoltaic arrays involved in this Project emit a weak electric and magnetic field (EMF) in the same low frequency as household electric appliances (MDER, 2015). The Applicant is not aware of any current research documenting any negative effects of solar arrays on communications technology. Based on these statements, the Project is not anticipated to interfere with any existing communications systems.

(1) Amplitude Modulation (AM) Radio

No records of Amplitude Modulation (AM) radio stations were identified within the two-mile radius of the proposed Project. The closest station, WVTL (1570 AM, operated out of Amsterdam, NY), is located 3.96 miles from the center of the Project. The operation of solar facilities is not anticipated to interfere with, or cause adverse impacts to, AM radio stations and will not be addressed further in this application.

(2) Frequency Modulation (FM) Radio

No records of Frequency Modulation (FM) radio stations were identified within the two-mile radius of the proposed Project. The closest station, W284BZ (104.7 FM, operated out of Amsterdam, NY) is located 3.97 miles from the center of the Project. As stated in 26(a)(1), the installation and operation of solar facilities is not anticipated to interfere with, or cause adverse impacts to, FM radio stations and will not be addressed further in this application.

Table 26-1. FM Stations within Five Miles of the Proposed Facility

Call Sign	Frequency (MHz)	Nearest Solar Panels (Kilometers)	Nearest Solar Panels (Miles)
WYAI	93.7	5.8	3.58
W284BZ	104.7	4.9	3.1
W295CZ	106.9	6.2	3.8

(3) Television

Off-air television stations, which do not include satellite or cable receptors, broadcast signals from terrestrially-based facilities directly to television receivers. Neither satellite TV nor cable TV reception is affected by the presence of solar panels. The Applicant examined coverage of off-air television stations in the area to identify any potentially impacted or degraded reception that would be associated with Project operation. There were no television stations identified within a two-mile radius of the proposed Project location.

If residents within the Project Area experience adverse impacts to their television reception and/or service after installation of the proposed solar panels they can issue a formal complaint with the Applicant. The Applicant will consider any complaints received and seek resolution in accordance with the Complaint Resolution Plan (see Appendix 12-3).

(4) Telephone

Wireless telephone services utilize several transmitters, with overlapping coverages, so signal blockage as a result of the solar Project operation is not anticipated. Wireless operators are granted area-wide licenses from the FCC to deploy their cellular networks, which often include handsets with E911 capabilities.

The Applicant identified 29 wireless licenses within Montgomery County. The provider and types of service (e.g., cellular, advanced wireless service, personal [PCS], wireless communications service [WCS]) are listed below in Table 26-2.

Table 26-2. Wireless Telephone Service Licenses within Montgomery County

#	Call Sign	Name	FRN	Radio Service
1	KNKA246	Cellco Partnership	0003290673	CL

Table 26-2. Wireless Telephone Service Licenses within Montgomery County

#	Call Sign	Name	FRN	Radio Service
2	KNKA263	New Cingular Wireless PCS, LLC	0003291192	CL
3	KNLB204	New Cingular Wireless PCS, LLC	0003291192	WS
4	KNLB289	Comcast WCS Communications, Inc.	0002147049	WS
5	KNLB297	New Cingular Wireless PCS, LLC	0003291192	WS
6	KNLB312	New Cingular Wireless PCS, LLC	0003291192	WS
7	KNLF202	T-Mobile License LLC	0001565449	CW
8	KNLF204	Sprint Spectrum Realty Company, LLC	0008157679	CW
9	KNLF669	NextWave Personal Communications Inc., Debtor-in-Possession	0002964922	CW
10	KNLF880	New Cingular Wireless PCS, LLC	0003291192	CW
11	KNLG243	New Cingular Wireless PCS, LLC	0003291192	CW
12	KNLG368	T-Mobile License LLC	0001565449	CW
13	L000003572	Rivada Networks, LLC	0016408916	CW
14	L000003601	Rivada Networks, LLC	0016408916	CW
15	L000003730	Rivada Networks, LLC	0016408916	CW
16	L000010060	T-Mobile License LLC	0001565449	AW
17	L000013706	T-Mobile License LLC	0001565449	CW
18	L000013751	New Cingular Wireless PCS, LLC	0003291192	CW

Table 26-2. Wireless Telephone Service Licenses within Montgomery County

#	Call Sign	Name	FRN	Radio Service
19	WPQL636	New Cingular Wireless PCS, LLC	0003291192	WS
20	WPSL626	New Cingular Wireless PCS, LLC	0003291192	CW
21	WQCS418	Cellco Partnership	3290673	CW
22	WQCX667	New Cingular Wireless PCS, LLC	3291192	CW
23	WQEM928	Cellco Partnership	3290673	CW
24	WQGA715	Cellco Partnership	3290673	AW
25	WQGA731	T-Mobile License LLC	1565449	AW
26	WQGA793	New Cingular Wireless PCS, LLC	3291192	AW
27	WQGD585	T-Mobile License LLC	1565449	AW
28	WQPZ962	Cellco Partnership	3290673	AW
29	WQPZ974	T-Mobile License LLC	1565449	AW

The Project will lack tall structures, therefore the frequencies of operation for these wireless services will not be affected. Therefore, no change in coverage should occur as a result of the Project installation and operation.

(5) Microwave Radio Transmission

Microwave transmissions provide long-distance and local telephone services, backhaul for cellular and personal communications services, and interconnects data for mainframe computers and the internet. These transmissions also provide network controls for utilities and railroads across the county, as well as various video services. There are 16 licensed microwave radio paths within 10 miles of the Project Area. Given that microwave radio equipment utilizes equipment to

filter out of band frequencies, no impacts to microwave communications are expected as a result of the Project.

Table 26-3. Microwave Radio Licenses within 10 miles of the Project Area

#	Call Sign	Name	FRN	Radio Service
1	KAM23	Capital District Regional Off Track Betting	3458668	MG
2	WNEL443	National Grid USA Service Company Inc.	5196530	MG
3	WNEL447	National Grid USA Service Company Inc.	5196530	MG
4	WPZL418	New York State Thruway Authority	4129540	MW
5	WPZL419	New York State Thruway Authority	4129540	MW
6	WQNJ703	Montgomery, County of	3439304	MW
7	WQNJ706	Montgomery, County of	3439304	MW
8	WQNJ707	Montgomery, County of	3439304	MW
9	WQNJ709	Montgomery, County of	3439304	MW
10	WQNJ710	Montgomery, County of	3439304	MW
11	WQNJ711	Montgomery, County of	3439304	MW
12	WQXA989	National Grid USA Service Company, Inc	5196530	MG
13	WQXA990	National Grid USA Service Company, Inc	5196530	MG
14	WQYP626	Capital District Transportation Authority	6342588	MW
15	WQYP638	Capital District Transportation Authority	6342588	MW
16	WQYP672	Capital District Transportation Authority	6342588	MW

(6) Emergency Services

Registered frequencies for utilized for public safety were evaluated for Montgomery county, including: Project: police, fire, emergency medical services (EMS), emergency management, hospitals, public works, transportation and other state, county, and municipal agencies. The Applicant identified 62 county-wide licenses designated for public safety, utilizing the FCC's Universal Licensing System (see Table 26-4).

Table 26-4. Site-Based Public Safety Licenses within Montgomery County

#	Call Sign	Name	FRN	Radio Service
1	KB88609	Fort Johnson Vol Fire Co Inc	3228442	PW
2	KBI975	Montgomery County Fire Coordinator	3439304	PW
3	KCA524	Mohawk, Town of	4484804	PW
4	KDT307	Amsterdam, City of	5132105	PW
5	KED486	Montgomery, County of	3439304	PW
6	KEF521	Montgomery, County of	3439304	PW
7	KEH49	Montgomery, County of	3439304	PW
8	KFT247	Fulton County	3439205	PW
9	KGK879	Fort Plain, Village of	6110654	PW
10	KGY249	City of Amsterdam	11054681	PW
11	KKM217	Montgomery, County of	3439304	PW
12	KLG392	New York, State of DOT	5813506	PW
13	KMK233	Brown Bus Service Inc	22446058	PW
14	KNAR447	Amsterdam, City of	5132105	PW
15	KNAT373	Otsego, County of	4125928	PW

Table 26-4. Site-Based Public Safety Licenses within Montgomery County

#	Call Sign	Name	FRN	Radio Service
16	KNCT709	Florida, Town of	6014823	PW
17	KNHD681	New York State Canal Corporation	25826108	PW
18	KNHP519	Brown Transportation Inc	11491149	PW
19	KNIL522	Montgomery, County of	3439304	PW
20	KNJE210	Fulton County	3439205	PW
21	KRX387	New York State Thruway Authority	4129540	PW
22	KTO69	Montgomery, County of	3439304	PW
23	KUI750	Town of Minden	3440880	PW
24	KVG995	Amsterdam, Town of	3443405	PW
25	KZB368	Saint Johnsville, Village of, Police Dept	3440088	PW
26	KZB383	Montgomery, County of	3439304	PW
27	KZG275	Hagaman Vol Fire Department	3453222	PW
28	WJK51	New York, State of	5813506	PW
29	WJK52	New York, State of	5813506	PW
30	WNIA723	State Of New York Division of State Police	3438595	PW
31	WNJZ887	Montgomery, County of	3439304	PW
32	WNUW622	New York, State of	3438611	PW
33	WNVC996	New York, State of	3438611	PW
34	WNVC998	New York, State of	3438611	PW

Table 26-4. Site-Based Public Safety Licenses within Montgomery County

#	Call Sign	Name	FRN	Radio Service
35	WNZI320	Fulton, County of	3439205	PW
36	WPBA605	Cranesville Volunteer Fire Department	6341234	PW
37	WPEI238	Fulton County	3439205	PW
38	WPML571	Burtonsville Volunteer Fire Department Inc	7609159	PW
39	WPMZ646	Town of Root	9669177	PW
40	WPNV597	Town of Canajoharie	10892750	PW
41	WPPV363	Brown Transportation Inc	11491149	PW
42	WPPW494	Little Falls Fonda Bus Corp	10467678	PW
43	WPQJ317	Montgomery, County of	3439304	PW
44	WPRF980	City of Amsterdam	11487519	PW
45	WPSJ958	Amsterdam City of	5132105	PW
46	WPTM750	St Johnsville Town of	5133673	PW
47	WPTM926	Ephratha, Town of	5131925	PW
48	WPTN280	Ephratha, Town of	5131925	PW
49	WPUB630	Montgomery County Sheriff	3439304	PW
50	WQBS926	New York State Canal Corporation	25826108	PW
51	WQDL533	New York, State of	3438611	PW
52	WQWE435	Saint Mary's Hospital	13195532	PW
53	WQWM379	Saint Mary's Hospital	23094261	PW

Table 26-4. Site-Based Public Safety Licenses within Montgomery County

#	Call Sign	Name	FRN	Radio Service
54	WQWN980	Montgomery, County of	3439304	PW
55	WQWW619	Montgomery, County of	3439304	PW
56	WQWW620	Montgomery, County of	3439304	PW
57	WQYN959	Montgomery, County of	3439304	PW
58	WQYX781	Glen, Town of Vol Fire Dept.	26203422	PW
59	WQZZ297	Canajoharie Central School District	26766188	PW
60	WRAM483	Fulton County	3439205	PW
61	WRDM288	Fulton County Emergency Management	3439205	PW
62	WSY225	Brown Coach Inc	12912010	PW

First responder, industrial/business land mobile sites, area-wide public safety, and E911 communications are typically unaffected by the presence of solar panels. Therefore, no significant adverse impacts are anticipated as a result of Project operation. This is due to the multiple transmitter locations utilized, similar to cellular services, and the ability for these signals to propagate through solar arrays.

Solar arrays should comply with the recommended conservative setback criteria for the FCC interference emissions in the land mobile bands. This distance, approximately 254 feet, is based on FCC inferences emissions from electrical devices in the land mobile frequency bands. The nearest land mobile-fixed base station is 6.56 miles (10.6 km) from the nearest proposed panel location.

There will be no adverse impact to emergency services communications coverage upon installation of the Project. The Applicant consulted with the Montgomery County Emergency Management Office to address any concerns related to communications. This consultation is constructive and collaborative to address any questions that may arise.

(7) Municipal/School District Services

The Applicant identified all municipal and school district communications sources within the vicinity of the Facility. There was one site-based license issued to the Canajoharie School District. There were numerous communications sources licensed to municipalities, including local towns. A full listing of sources is identified in Table 26-4, above.

Typically, mobile sites and area-wide public safety communications, including both municipal and school communications, are unaffected by the presence of solar arrays. No adverse impacts to these services are anticipated as a result of the Project operation.

(8) Public Utility Services

The Applicant has identified the following public utilities with a two-mile radius of the Project Area:

- Verizon Communications
- National Grid USA

Impacts to any of the above listed public utilities are not anticipated as a result of the Project. Prior to the commencement construction, the Applicant and/or the Engineering, Procurement, and Construction (EPC) contractor will contact Dig Safely New York and request a mark out of all existing utilities. Dig Safely New York is a one-call center that facilitates the coordination of construction contractors and underground utility operators. Their goal is to prevent damages to underground facilities and protect the public through education and quality communication with excavators, underground facility operators, and designers in an efficient, courteous, and cost-effective manner, while complying with governing regulations

(9) Doppler/Weather Radar

Doppler weather radar, or next-generation radar (NEXRAD), are operated by the National Weather Service. This radar allows for the generation of meteorological and hydrological short-term forecasts based on algorithms with inputs of detected precipitation, winds, temperature, and humidity.

The Applicant identified four NEXRADs in the vicinity of the Project: KBGM, KTYX, KCXX, and KENX. The closest NEXRAD (KENX) is located approximately 22 miles (35 km) from the proposed installation of photovoltaic (PV) panels. Based on USGS terrain elevation of the area, the installation of the PV panels will not negatively affect the radiation pattern and/or block the RF signals of any of the four NEXRADs.

(10) Air Traffic Control

The closest air traffic control tower is located approximately 9.7 miles east of the proposed Project at the Schenectady County Airport. Three additional airports were identified. These included the Mohawk Valley Airport K-13 at approximately 4.8 miles to the east, the Duanesburg Airport-4b1 at approximately 8.5 miles to the south, and the Snow Field Airport at approximately 4.4 miles to the northeast. The Federal Aviation Administration (FAA) is responsible for air traffic control and for evaluating and issuing determinations on the petitions for objects to penetrate national airspace. Air traffic control is not anticipated to be affected by the construction and operation of the Project, and therefore FAA consultation was not determined to be required.

(11) Armed Forces

The Applicant does not anticipate any issues with any armed forces facilities. The nearest armed forces facilities are the Army Recruiting Schenectady office, the U.S. Army Department military base, and the Air National Guard Air Force base, all approximately 10.3 miles southeast of the proposed solar energy Facility. The Applicant sent written notification of the proposed Facility to the National Telecommunications and Information Administration (NTIA) on June 25, 2019. No response has yet been received regarding potential impacts the Project may have on federal communication services. No impacts are expected to occur as a result of the Project.

(12) Global Positioning Systems (GPS)

The Applicant examined GPS antennas registered with the National Oceanic and Atmospheric Administration (NOAA) Continuously Operating Reference Station (CORS) database to determine if a radio line-of-sight (RLOS) existed with the Project. The closest GPS ground facilities to the proposed solar energy Facility are the Fultonville NY, Saratoga Springs, NY and Cobleskill, NY GPS antennas.

Due to the low EMFs emitted by solar facilities, and the distance between the proposed Project and the closest antennae, the Project is not expected to cause interference to the operation of GPS antennas.

(13) Long Range Navigation (LORAN)

Long Range Navigation (LORAN) is a system developed during World War II. Radio signals were sent across long distances through radio towers to guide ships and aircraft. The United States Coast Guard, in accordance with the 2010 Department of Homeland Security Appropriations Act,

terminated the transmission of all United States LORAN signals. Therefore, no further discussion of LORAN is provided in this Application, as there will be no impact.

(14) Amateur Radio Licenses Registered to Users

The Applicant searched the FCC's Universal Licensing System database for all amateur radio licenses (HA & HV service codes) registered to users within a two-mile radius of the Project. No licensed users were identified. There are no anticipated impacts to amateur radio licenses registered users as part of the Project.

26(b) Existing Underground Cable and Fiber Optic Major Transmission Location Telecommunication Lines

Utility and fiber optic lines have been located and any underground cables or fiber optic lines found within the Project have been identified. One fiber route, Crown Castle, was found to intersect the northern and eastern portions of the Project Area, and multiple fiber routes (including Atlantic Broadband, First Light, Independent Optical, Unit Fiber, and Windstream) along with an existing electric transmission line have been identified just north of the Project Area (see Figure 4-2). FiberLocator, a source for fiber maps with geocoding technology and multiple datasets, was used to obtain the locations of utility and fiber optic lines. The Applicant and/or EPC Contractor will submit, prior to construction, a request for information with Dig Safely New York to receive all documented buried utilities within the Project Area. Safety of all on-site personnel and the prevention of damages to existing/operating utilities is a top priority of the Applicant. Using the information compiled on current fiber optic and/or underground cables, the Applicant will avoid interference or minimize interference where avoidance is not possible through the use of directional boring instead of trenching, relocation of Project Components (i.e., relocating panels to avoid interference), and crossing of existing utilities at 90 degree angles.

The Project will avoid any impacts to underground cables or fiber optic lines. The Applicant will contact Montgomery County to confirm identification of any fiber potentially connecting radio towers.

26(c) Electric Interconnection Effects

The Applicant conducted the review for the Project as well as the tap line and interconnection facilities and has determined that there will be no adverse impacts to communications technologies. The Applicant reviewed Federal Communications Commission (FCC) license data and other appropriate databases to review TV, Radio, Cellular, or Microwave communications as well as Doppler radar as described below.

(1) Structures to Interfere with Broadcast Patterns

After analyzing broadcast signals within the Project Area, and due to the lack of tall structures included in Project Components, it has been determined that there are no Project structures that will create major interference with broadcast patterns.

(2) Structures to Block Necessary Lines-of-Sight

The Applicant reviewed the area of the proposed Project for existing licensed microwave links to identify the potential for signal degradation and/or obstruction of microwave signals. Based on clearance criteria, it was determined that there will be no degradation and/or obstruction to microwave signals in the area.

(3) Physical Disturbance by Construction Activities

Prior to construction, the Applicant will submit a “design ticket” to Dig Safely New York, which will initiate a process in which utilities provide relevant mapping to the Applicant. The Project will avoid any impacts to underground cables or fiber optic lines. The Applicant has conducted surveys throughout the Project Area to determine that there is not expected to be any physical disturbance to communications systems infrastructure by construction activities.

(4) Adverse Impacts to Co-Located Lines due to Unintended Bonding

The Applicant has no intention of co-locating any buried lines related to the Interconnection or Transmission Facilities. This section does not apply.

(5) Other Interference Potential

Based on the Applicant’s analysis there is not expected to be any significant interference to communications systems as a result of the Project.

26(d) Adverse Effects on Communication Systems

As stated above, the Applicant does not expect any adverse effect on communications systems due to the Project. The Applicant has conducted many studies to determine the impact, if any, on communications systems due to the Project. This extensive analysis in combination with surveys within the Project Area and the consultations with New York State and federal agencies provides the Applicant confidence that there will be no significant impacts to communications. The Applicant will continue to consult, if required, with the FAA and the United States Department of Defense (DoD) to confirm that there are no impacts associated with the Project under their jurisdiction.

26(e) Plans to Mitigate Impacts on Existing Communications Sources

After consulting with the appropriate agencies and conducting sufficient analyses, the Applicant has used best design practices to avoid and/or mitigate potential impact risks prior to finalizing preliminary designs and plans for construction. Because these precautions have been taken, it is not expected for there to be adverse impacts to communications systems.

In the event that there is a significant adverse effect to communications systems post-construction, this will be resolved through the complaint resolution process which can be found in all document repositories, can be provided upon request, will be online, and is located in Appendix 12-3 of this Application. After proper analysis, measures will be taken to resolve the issues presented. In addition, the Applicant's on-site SCADA (Supervisory Control and Data Acquisition) communications system will be inspected and maintained throughout the life of the Project.

26(f) Wind Power Facilities Interference with Radar or Instrument Systems Used for Air Traffic Control, Guidance, Weather, or Military Operations

There are no wind power facilities proposed as part of the Project, therefore this section of Exhibit 26 is not applicable to this Project.

References

- Federal Communications Commission (FCC). May 2019. *Broadcast Station Search*. <https://www.fcc.gov/media/radio/fm-query>. Accessed August 2019.
- FCC. 2019. *Fixed Broadband Deployment*. <https://broadbandmap.fcc.gov/#/>. Accessed August 2019.
- FCC. *Universal Licensing System*. <https://wireless2.fcc.gov/UlsApp/UlsSearch/licenseLocSum.jsp?licKey=1039449>. Accessed August 2019.
- Massachusetts Department of Energy Resources, et al. (MDER). 2015. *Clean Energy Results: Questions and Answers, Ground-Mounted Solar Photovoltaic Systems*. June 2015. "MDER Q&A," p. 10.
- United States Department of Commerce National Oceanic and Atmospheric Administration (NOAA). April 2019. *Continuously Operating Reference Station (CORS) Map*. <https://www.ngs.noaa.gov/CORS/>. Accessed August 2019.