

GeoPlanner™

Over-the-Air TV Analysis

Posey Solar



Prepared on Behalf of
Posey Solar LLC

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1. Introduction

Over-the-air (OTA) television stations broadcast signals from terrestrially-based facilities directly to television receivers. Comsearch identified those OTA stations whose service could potentially be affected by a proposed solar farm. Posey Solar is proposing to construct and place in utility an electric generation facility located in Posey County, Indiana. The facility will generate electricity using silicon photovoltaic (PV) modules fixed to single axis solar trackers. The installed capacity will be up to 300 MW ac (380 MW dc).

Comsearch examined the coverage of the OTA stations identified and the communities in the area that could potentially have degraded television reception due to the location of the solar farm.

2. Summary of Results

The proposed solar farm project area and local communities are depicted in Figure 1 below.

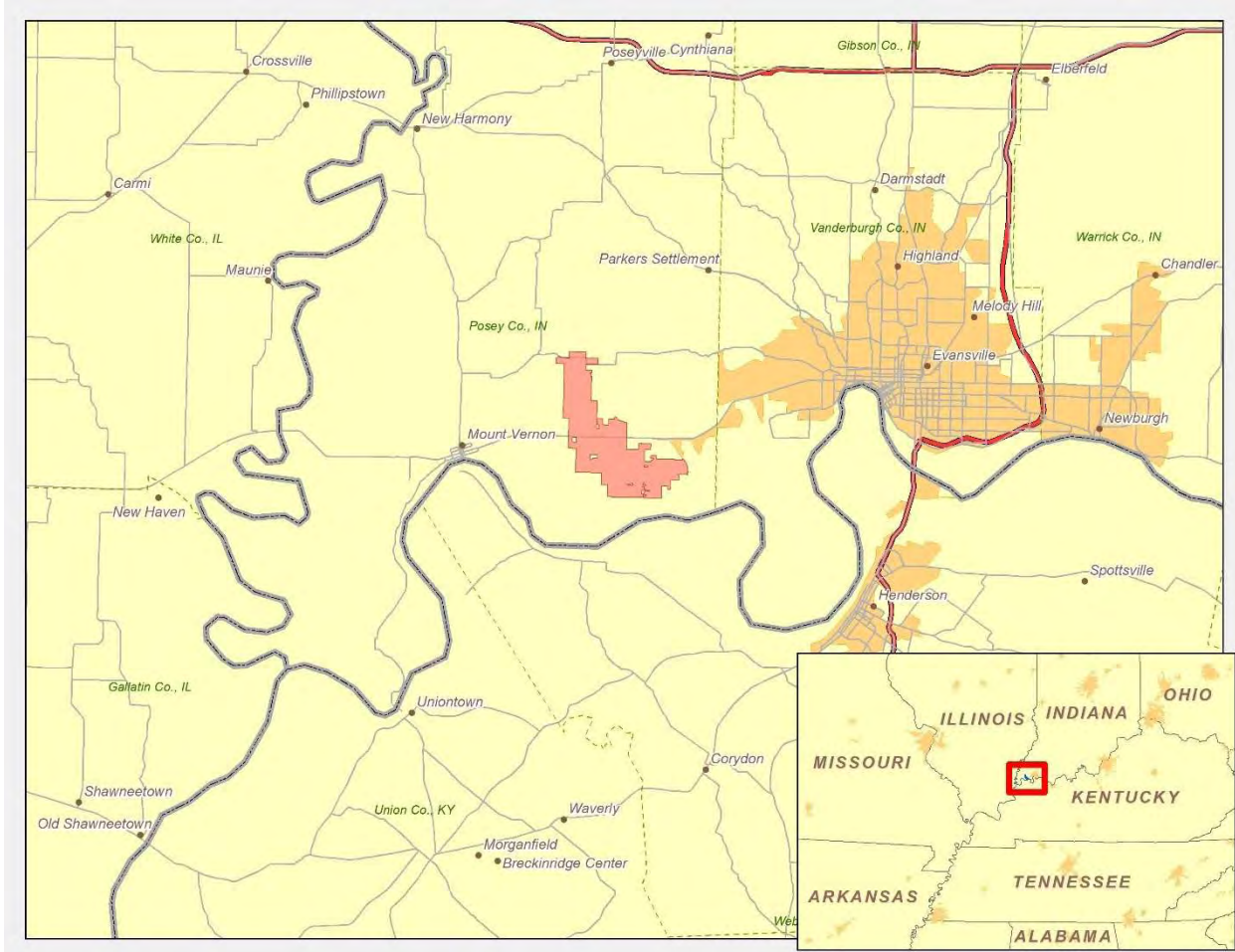


Figure 1: Solar Farm Project Area and Local Communities

To begin the analysis, Comsearch compiled all OTA television stations¹ within 100 kilometers of the solar farm. TV stations at a distance of 100 kilometers or less are the most likely to provide OTA coverage to the project area and neighboring communities. These stations are listed in Table 1 below, and a plot depicting their locations is provided in Figure 2. There are a total of thirty-two database records for stations within approximately 100 kilometers of the solar farm. Of these stations, only seventeen are currently licensed and operating, and three 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.

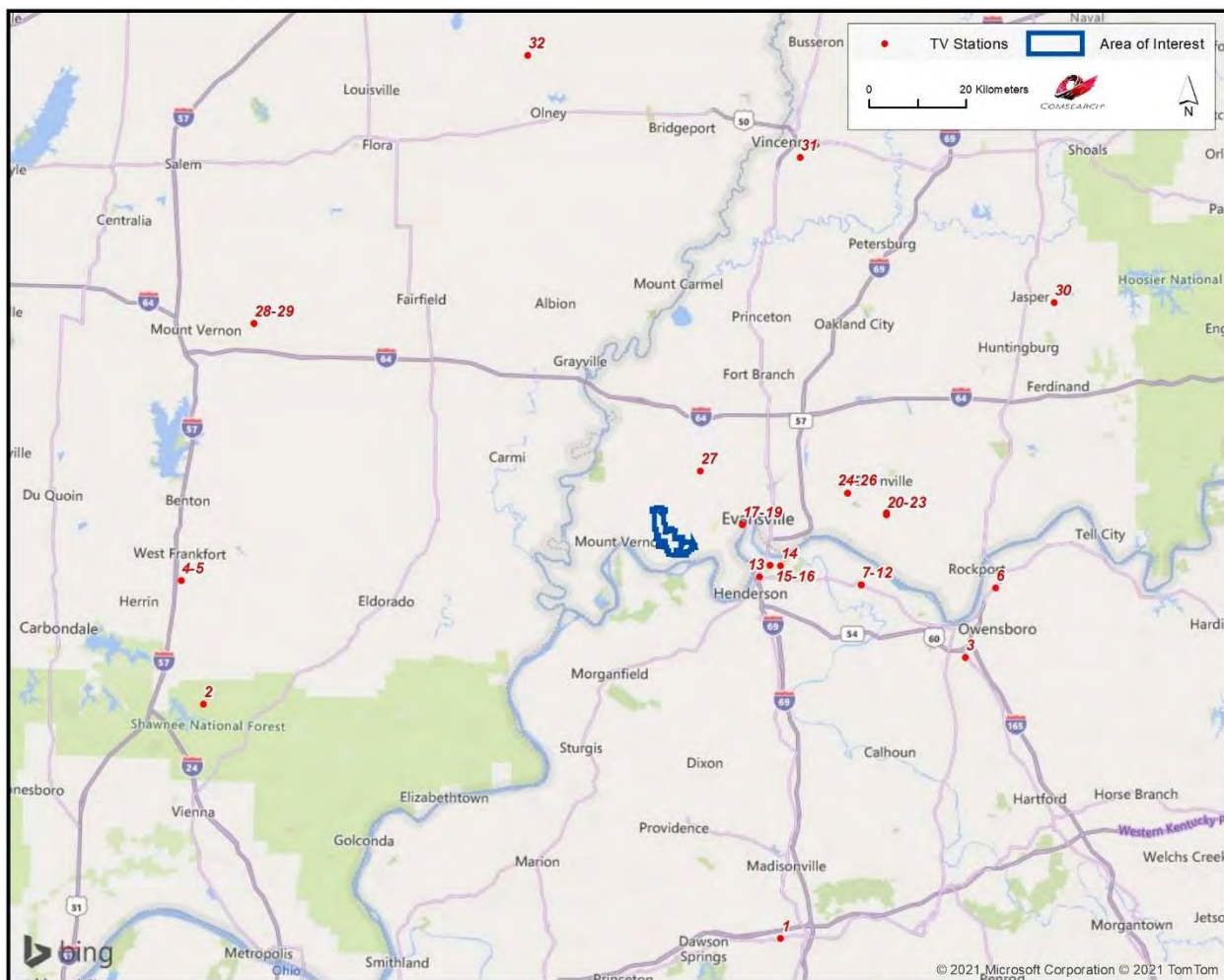


Figure 2: Plot of OTA TV Stations within 100 Kilometers of Solar Farm

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)
1	WKMA-TV	LIC	DTV	31	36.7	37.189167	-87.513611
2	WSIL-TV	LIC	DTV	34	1000.0	37.613889	-88.872222
3	W12BJ	LIC	LPA	12	0.036	37.716972	-87.083306
4	W15BU-D	CP	DCA	15	15.0	37.845278	-88.929444
5	W15BU-D	LIC	DCA	15	7.0	37.845278	-88.929444
6	W25FO-D	CP	LPD	25	1.0	37.846722	-87.012111
7	W06DG-D	CP	LPD	6	3.0	37.851944	-87.328889
8	W14EV-D	CP	LPD	14	15.0	37.851944	-87.328889
9	WKOH	LIC	DTV	17	37.3	37.851944	-87.328889
10	WDLH-LD	CP	LPD	24	15.0	37.851944	-87.328889
11	W32FR-D	CP	LPD	32	10.0	37.851944	-87.328889
12	W35DX-D	CP	LPD	35	15.0	37.851944	-87.328889
13	WEHT	LIC	DTV	12	14.0	37.865833	-87.567778
14	WFIE	LIC	DTV	26	200.0	37.887278	-87.518611
15	WEEV-LD	LIC	LPD	21	4.0	37.888111	-87.543611
16	WEVV-TV	LIC	DTV	28	243.0	37.888111	-87.543611
17	W10DG-D	CP	LPD	10	0.5	37.963361	-87.609333
18	WZDS-LD	CP	LPD	18	15.0	37.963361	-87.609333
19	W19EW-D	CP	LPD	19	5.0	37.963361	-87.609333
20	WNIN	CP	DTV	9	27.0	37.983611	-87.270278
21	WNIN	LIC	DTV	9	19.0	37.983611	-87.270278
22	WYYW-CD	LIC	DCA	15	15.0	37.986944	-87.269722

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

³ ERP = Transmit Effective Radiated Power

ID	Call Sign	Status	Service ²	Channel	Transmit ERP ³ (kW)	Latitude (NAD 83)	Longitude (NAD 83)
23	WTSN-CD	LIC	DCA	20	15.0	37.986944	-87.269722
24	WTVW	LIC	DTV	22	1000.0	38.024111	-87.362028
25	WELW-LD	CP	LPD	30	15.0	38.024111	-87.362028
26	WEIN-LD	CP	LPD	36	15.0	38.024111	-87.362028
27	W23BV-D	LIC	LPD	23	3.46	38.063639	-87.71
28	W21ED-D	CP	LPD	21	15.0	38.32825	-88.770444
29	W27EN-D	CP	LPD	27	15.0	38.32825	-88.770444
30	WJTS-CD	LIC	DCA	24	15.0	38.381444	-86.873889
31	WVUT	LIC	DTV	31	69.4	38.651667	-87.476944
32	WUSI-TV	LIC	DTV	23	110.0	38.838611	-88.129722

Table 1: OTA TV Stations within 100 Kilometers of Solar Farm

3. Impact Assessment

Typically, solar farms do not cause electromagnetic interference (EMI) to OTA television reception. If any, the most likely source of EMI are the photovoltaic (PV) inverters that are installed at every Power Conversion Station (PSC) throughout the solar farm. These PV inverters convert the direct current (DC) current output of a solar array into alternating current (AC) that can be fed into a commercial electrical grid. However, Title 47 Part 15B of the FCC rules and regulations provide guidelines for grid-tied PV inverters such that their EMI emissions are controlled to within certain limits and thereby avoid contaminating the AC grid voltage. And due to the low frequency (60 Hz) operation of the PV inverters, EMI from these devices does not normally extend above 1 MHz which would be well below the frequency of operation for OTA television.

4. Recommendations

If possible, the PV inverters of a power conversion station (PCS) should be installed away from residential areas to reduce the likelihood of EMI to households that may rely on OTA television service. At minimum, a setback distance of 250 feet from any household is recommended. In the unlikely event that EMI is observed at a certain household following the construction of the solar farm, a high-gain directional antenna may be employed, preferably outdoors, and oriented towards the signal origin to mitigate the potential impact on OTA TV signal reception.

Both cable service and direct broadcast satellite service will be unaffected by the presence of the solar farm and may be offered to those residents who can show that their OTA TV reception has been disrupted by the presence of the solar farm after it is installed.

5. Contact

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

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