

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of)	
Hecate Energy Highland 4, LLC for)	Case No. 20-1288-EL-BGN
A Certificate of Environmental Compatibility)	
And Public Need.)	

**DIRECT TESTIMONY OF DAN BOWAR
ON BEHALF OF
EVS INC.**

EVS Exhibit _____

November 7, 2023.

1 **Q. Please state your name and business address, and title.**

2
3 A. My name is Dan Bowar, and my business address is 10025 Valley View Road, Eden
4 Prairie, Minnesota 55344. I am a Senior Civil Engineer.

5
6 **Q. On whose behalf are you testifying?**

7
8 A. EVS, Inc. ("EVS").
9

10 **Q. Have you previously testified before the Ohio Power Sitting Board?**

11
12 A. Yes, I have previously testified in Ohio Power Siting Board Case No. 21-1090-EL-BGN.
13

14 **Q. Who you are currently employed by and what are your general job duties?**

15
16 A. I am with EVS, Inc as a Senior Civil Engineer. I oversee project design, budgets and
17 schedules for clients developing and constructing photovoltaic ("PV") solar projects across
18 the United States.
19

20 **Q. Please provide your educational background.**

21
22 A. I have a BA in Physics from Gustavus Adolphus College and a BCE from the University
23 of Minnesota. I have worked for EVS for over 14 years working on commercial, public
24 and numerous PV solar projects across the United States.
25

26 **Q. Do you have any professional licenses?**

27
28 A. Yes, I am a Licensed Professional Engineer in the following states; Minnesota, Wisconsin,
29 New York, Michigan, Alabama and West Virginia.
30

31 **Q. Are you familiar with the Project that is referred to as New Market Solar?**

32
33 A. Yes, I was the Civil Project Manager overseeing the civil design, budget and coordination
34 with the client. EVS became involved in the project with the general contractor by
35 responding to an RFP. EVS prepared the final construction documents for the contractor
36 use and the owner to review. I worked under the direction and supervision of Noah
37 Waterhouse, a licensed PE in Ohio, who sealed/stamped the formal submissions on this
38 Project. Mr. Waterhouse's PE number in Ohio is PE80989. EVS as a company is also
39 authorized to practice engineering in Ohio, License Number COA.05022.
40

41 **Q. How is it that you are familiar with the Project?**

42
43 A. EVS was the engineer retained by the general contractor to design the solar arrays and
44 prepare the site plan.
45
46

1 **Q. Can you describe in further detail what those design duties were?**

2
3 A. Yes, sometime in November of 2020, we were provided a rough layout from our client,
4 McCarthy Building Companies, who had entered into a Design-Build contract with the
5 owner of the project. We were provided background information to prepare the documents
6 for review. My role was to oversee the civil design which consists of grading and drainage
7 design as well as work with the contractor to finalize the layout.
8

9 **Q. Please describe Attachment DB-1 to your testimony.**

10
11 A. Attachment DB-1 is an email between representatives of the general contractor for whom
12 we worked on this Project.
13

14 **Q. Are you familiar with that email?**

15
16 A. Yes, it describes material that was provided to EVS, namely, site constraints, that would
17 dictate how that site was to be designed, so McCarthy Building Companies provided EVS
18 with an existing layout that was already done.
19

20 **Q. Can you describe what “constraints” mean as you used it in your answer above?**

21
22 A. Constraints are items which will influence the layout of the project. These can be something
23 obvious such as a public road, or something not as clear as anticipated water flow across a
24 site. We typically refer to the ALTA survey, environmental documents, hydrologic analysis
25 and other owner provided documents or jurisdictional requirements. An ALTA survey is a
26 survey showing the boundaries of a property are delineated, making note of any easements
27 or public right-of-way, or any other addition to or deletion from the property throughout
28 the course of the parcel’s history.
29

30 **Q. And in this case was there a specific constraint that was provided to EVS to use in**
31 **their layout that is apparent?**

32
33 A. Yes, there is a constraint calling out a 50’ setback.
34

35 **Q. Can you tell us what a setback is relative to the project in question?**

36
37 A. A setback is what it sounds like, a constraint which influences the layout of a project. In
38 the case of this project, the setback was for equipment from the property line.
39

40 **Q. And that was provided to EVS by McCarthy, the general contractor who EVS had a**
41 **contract with correct?**

42
43 A. Yes.
44
45
46

1 **Q. Would McCarthy have received that setback information from anyone?**

2
3 A. McCarthy prepared a draft site plan which utilized the 50-ft setback as a placeholder. This
4 is common with limited time during the bidding process and a hard bid to win the project
5 assumptions have to be made. The owner then has the opportunity to review the proposals
6 and comment.
7

8 **Q. What is Attached DB-2 to your testimony?**

9
10 A. It is a Basis of Design dated December 21, 2020. EVS prepares a Basis of Design to outline
11 the key design elements of the project. Based on research of available information,
12 engineering judgment, and an understanding of solar construction EVS prepares the ‘rules’
13 which EVS uses to proceed with project design.
14

15 **Q. What is the purpose of the Basis of Design?**

16
17 A. EVS uses the Basis of Design to inform our client, and ultimately the owner, that these are
18 design parameters that we are using.
19

20 **Q. How is the basis of design ultimately reflected?**

21
22 A. It is reflected in EVS’ drawings, whether those are progress drawings for everyone’s
23 review, such as the owner, the contractor and the governmental authority.
24

25 **Q. One of the items you describe in the Basis of the Design is a 45’ setback, how did EVS**
26 **come about identifying a 45’ setback?**

27
28 A. It was reflected in the Highland County Conveyance Standards.
29

30 **Q. Please explain what Exhibit DB-3 to your testimony is?**

31
32 A. Exhibit DB-3 is the Highland County Conveyance Standards.
33

34 **Q. Did you review and rely on Exhibit DB-3 in preparing your basis of design and**
35 **ultimately your drawings for submittal?**

36
37 A. Yes, specifically, there is a setback chart on page 12, Article 4, Table 1.
38

39 **Q. What section of this table you relied upon?**

40
41 A. The industrial portion that mandates a 45’ setback.
42

43 **Q. Is there a setback requirement for either commercial or Industrial that is greater than**
44 **50’**

45
46 A. No.

1 **Q. And your research into determining setbacks, is that typical that EVS as a designer**
2 **would look to the local authorities for instruction?**

3
4 A. Yes.

5
6 **Q. In discussing the design process, have you heard of the phrase collaboration before?**

7
8 A. Yes

9
10 **Q. What does that mean?**

11
12 A. It means that as a designer, EVS does not design in a vacuum, EVS works with the owner,
13 the contractor and the governmental agencies to arrive at an acceptance point where
14 construction can begin.

15
16 **Q. In this project, would phrase collaboration be applicable?**

17
18 A. Yes.

19
20 **Q. Please describe the collaboration**

21
22 A. In this case, we had a very hands-on owner, who reviewed our drawings at various stages,
23 as well as our layouts. We had a Design-Build contractor in McCarthy who was very
24 involved in the design process. EVS prepared various drawings at stages, as well as various
25 layouts. The stages of design we referred to as 30% complete; 60% complete and 90%
26 complete. These drawing were then submitted for review to McCarthy and the owner and
27 ultimately submitted to the Ohio Power Siting Board for their approval, which was
28 provided because the construction started.

29
30 **Q. And with regards to the 30% drawings, did you prepare those?**

31
32 A. Yes, under the supervision and direction of Noah Waterhouse.

33
34 **Q. Describe Attachment DB-4 to your testimony.**

35
36 A. It is a drawing and part of the 30% set of drawings, dated January 19, 2021, that EVS
37 prepared for this project.

38
39 **Q. And there are initials DB by "Checked By" on the initial coversheet C-000 correct?**

40
41 A. Yes, those are my initials.

42
43 **Q. What does "Checked By" mean?**

44
45 A. It means I reviewed the work product to make sure that it matched up with our Basis of
46 Design at this particular stage.

1 **Q. On that first page, is there a chart identifying setbacks?**

2
3 A. Yes, it is in bold and front and center of the page and identifies the setbacks for this project
4 so everyone can see it.
5

6 **Q. If we turn to C-201, which is the site and grading plan, would you find any reference**
7 **to setbacks?**
8

9 A. Yes, there are multiple references to a 45' setback for equipment, which is consistent with
10 the Basis of Design and Highland County requirements.
11

12 **Q. On C-203, do you see the same thing with regard to 45' setbacks for equipment.**
13

14 A. Yes.
15

16 **Q. Are you aware of whether these drawings were submitted to McCarthy?**
17

18 A. Yes, they were.
19

20 **Q. Would you then expect McCarthy to submit it to the owner?**
21

22 A. Yes.
23

24 **Q. Any reason to think that McCarthy didn't submit it to the owner?**
25

26 A. No, in fact we received many comments from the owner regarding these drawings.
27

28 **Q. Based upon the owner's review, how would you characterize the owner's review of**
29 **your drawings?**
30

31 A. Very thorough. It took them over a week to review.
32

33 **Q. Would you review the owner's comments and then incorporate potential changes into**
34 **a revised set?**
35

36 A. Yes.
37

38 **Q. Describe Attachment DB-5 to your testimony.**
39

40 A. Attachment DB-5 is a set of drawings, dated February 1, 2021, and is entitled: "Ohio Power
41 Siting Board Review."
42

43 **Q. Can you tell us what the phrase "Ohio Power Siting Board Review" means?**
44

45 A. Yes, EVS was informed that the owner was going to make a submission to the Ohio Power
46 Siting Board, so this was the purpose of that drawing revision.

1 **Q. If you could turn to sheet C-201, which is the site and grading plan, can you tell us**
2 **whether you have identified setbacks on this drawing?**

3
4 A. Yes, there were. There are multiple references to a 45' equipment setback that show very
5 clearly the intent of the design.

6
7 **Q. If you look at Sheets C-202 and 203, can you find other setback identifications?**

8
9 A. Yes, again, they are clearly marked as 45' for equipment.

10
11 **Q. Please describe Attachment DB-6 to your testimony.**

12
13 A. Attachment DB-6 is a drawing, dated February 5, 2021, and is entitled: "Ohio Power Siting
14 Board Review.

15
16 **Q. Are there any references to a 45' setback in Attachment DB-6?**

17
18 A. Yes, on Sheets C202-203, just like in Attachment DB-5.

19
20 **Q. Would Attachment DB-6 be issued due to additional comments from the owner or**
21 **McCarthy or another third party?**

22
23 A. Yes.

24
25 **Q. Please describe Attachment DB-7 to your testimony.**

26
27 A. Attachment DB-7 is a portion of Attachment DB-6, dated February 5, 2021, and is entitled:
28 "Ohio Power Siting Board Review that EVS received in response to a sunshine request
29 EVS' counsel submitted to the Ohio Power Siting Board ("OPSB").

30
31 **Q. Do Sheets C201-203 in Attachment DB-7 appear consistent with Attachment DB-6?**

32
33 A. Yes, except that it is not a complete set of our drawings at this stage.

34
35 **Q. When you review Attachment DB-7, are you able to tell me whether there are setbacks**
36 **identified in Sheets C201-203**

37
38 A. Yes, the same 45' equipment setbacks as indicated in Attachment DB-6.

39
40 **Q. Please describe Attachment DB-8 to your testimony.**

41
42 A. Attachment DB-8 is a civil cover sheet dated May 26, 2021, and noted that it is a 60%
43 completion.

44 **Q. The front page of this continues to show a setback of not greater than 50' correct?**

45
46 A. Yes.

1 **Q. Please describe Attachment DB-9 to your testimony.**

2
3 A. Attachment DB-9 is another document created by EVS, dated May 26, 2021, entitled:
4 “60% submittal” that was provided to EVS by the Ohio Power Siting Board in response
5 to a sunshine request.
6

7 **Q. If you look at Sheets C201-203 of Attachment DB-9, do you see any reference to**
8 **setbacks?**
9

10 A. Yes, the same 45’ setbacks that EVS identified in December of 2020 in EVS’ Basis of
11 Design, our 30% submittals and continuing on to this submission.
12

13 **Q. Are there callouts on Attachment DB-9?**
14

15 A. Yes. Each callout is identified with the moniker “DBrandt”.
16

17 **Q. Are you aware of anyone with that name employed by EVS?**
18

19 A. No.
20

21 **Q. Are you aware of anyone with that name employed by McCarthy?**
22

23 A. No.
24

25 **Q. If you eliminate EVS and McCarthy, based upon your knowledge of this Project and**
26 **who had access to these documents, who could have provided the callouts?**
27

28 A. Someone with the owner or OPSB.
29

30 **Q. As you have gone through these stages of the basis of design, the 30% and 60%**
31 **submittals, was EVS consistent in its use of 45’ setbacks?**
32

33 A. Yes.
34

35 **Q. And how long is that period from December 21 to May 26, 2021?**
36

37 A. Six Months.
38

39 **Q. And during that 6-month time period did anyone from ownership or McCarthy or**
40 **OPSB ever tell you that equipment setbacks must be 100’ and that you needed to**
41 **change your drawings?**
42

43 A. No, it never happened.
44
45
46

1 **Q. Do you feel that setbacks you had identified in the drawings were clear and easily**
2 **discernable?**

3
4 A. Absolutely they were. They were identified on the cover sheet, in the drawings and clearly
5 and specifically always called out as 45'.

6
7 **Q. If someone had pointed out that the setback was required to be 100' in February**
8 **through May of 2021, what would you have done?**

9
10 A. We would simply change the drawings at that point.

11
12 **Q. And what was the feedback you received on the drawings?**

13
14 A. To the extent that the owner wanted changes, we made them, but the owner approved all
15 stages of our 30% and 60% drawings, which means that EVS was to proceed to finalizing
16 the design, and construction drawings, which means that the agency, in this case, OPSB
17 must have approved the drawings.

18
19 **Q. Did there come a time when you were made aware of some concerns about the 45'**
20 **setbacks that were identified on the drawings that the owner approved?**

21
22 A. In the middle of 2022, an engineer from ownership by the name of Caroline Wojtyla
23 contacted McCarthy and EVS asking us about the setback and where we got the 45'
24 setback.

25
26 **Q. Did you respond to her?**

27
28 A. Yes, given that our Basis of Design, which dated back to December of 2020, had a 45'
29 setback consistent with Highland County, along with all of our owner approved drawings
30 showing 45' setback, we forwarded her the table from Highland County.

31
32 **Q. Please describe Attachment DB-10 to your testimony.**

33
34 A. Attachment DB-10 is the written portion of the owner's Application in this proceeding.

35
36 **Q. Have you reviewed the Application?**

37
38 A. Yes.

39
40 **Q. Do you recall any reference to setbacks in the Application?**

41
42 A. Yes, on page 22 the following is provided:

Response:

Ohio Admin. Code 4906-4-04(B)(1)

A map showing constraints that influenced the design of the Projects is provided in **Figure 5**. The constraints shown on the map include those listed above: setbacks from residences, property lines, utility corridors, and public rights-of-way. The map also shows additional constraints Applicant considered, such as streams and wetlands.

The following clarifications and exclusions apply to the setbacks shown:

- **Property Lines:** Setbacks are only to property lines at the exterior of the property. When two contiguous parcels are included in the Projects, there are no setbacks between the parcels even if under separate ownership. Property lines are based on GIS data. Setback locations will be adjusted following detailed site surveys. In consultation with Highland County, the established setbacks from property boundaries is 100 feet.

1
2
3 **Q. If you note the language in the application that states “In consultation with Highland**
4 **County, the established setbacks from property boundaries is 100 feet”—where do**
5 **we see 100’ setbacks in Attachment DB-3, the Highland County Conveyance**
6 **Standards?**

7
8 A. There is no 100’ setback requirement in Attachment DB-3.
9

10 **Q. Please describe Attachment DB-11 to your testimony.**
11

12 A. Attachment DB-11 is an email and attachment I received from McCarthy enclosing a
13 January 4th report to EVS, in which I was instructed to “review most specifically page 33
14 and on, for what we need for this Feb 1 submission.”
15

16 **Q. Did you review page 33 onward and tell us whether you see any reference in the**
17 **conditions to 100’ setback?**
18

19 A. I did. I found no reference to a 100’ setback.
20

21 **Q. During this time period and afterward, what was the project designed for with regard**
22 **to setbacks?**
23

24 A. 45’.
25

26 **Q. Please describe Attachment DB-12 to your testimony.**
27

28 A. Attachment DB-12 is a May 20, 2022, letter from the owners filed in the docket in this
29 proceeding that shows compliance with conditions 5, 6 and 9 of the Project’s Certificate.
30
31
32

- 1 **Q. Within Attachment DB-12 do you see any drawings prepared by EVS that identify a**
2 **setback?**
3
- 4 A. Yes, I do. There are EVS drawings dated September 7, 2021, and on pages C201-C203
5 the setbacks are clearly shown and state that they are 45'.
6
- 7 **Q. How many instances of 45' setbacks do you see on these drawings?**
8
- 9 A. I see eight references which are very clearly identified.
10
- 11 **Q. From January 2021 through the end of 2021 are you aware of whether there was any**
12 **filing that was submitted to the OPSB in which you deviated from a 45' setback?**
13
- 14 A. None to my knowledge.
15
- 16 **Q. And every phase of EVS' drawings from that time period shows a setback of 45'**
17 **correct?**
18
- 19 A. Yes.
20
- 21 **Q. If you go through the rest of the Staff Report, if you look at just the project**
22 **description, do you see reference to a 100' setback?**
23
- 24 A. Yes, it states "The Applicant would ensure that solar modules are setback a minimum of
25 100 feet from adjacent residences and public road centerlines"
26
- 27 **Q. Reading that language now, does it trouble you that there is identified a 100' setback**
28 **not in the conditions, but in the project description?**
29
- 30 A. No, because this project was always designed for 45' setbacks, every submission of our
31 drawings to the owner showed 45' setbacks, and the filings with OPSB that showed
32 compliance, all identified 45' setbacks.
33
- 34 **Q. Did you have direct contact with OPSB?**
35
- 36 A. No, EVS' contract was with McCarthy, and for the most part we dealt directly with
37 McCarthy. For each of EVS' drawings, EVS would provide its drawings and sometimes
38 its CAD files to McCarthy for the owner's review. In the case of each drawing, EVS would
39 receive a multitude of comments from the owner.
40
- 41 **Q. And what would be the benefit to the owner or anyone else of having a CAD file?**
42
- 43 A. The owner would have the ability to measure spacing, setbacks, and see anything which
44 was not clearly dimensioned on the plans. The CAD files are the backgrounds used to
45 prepare the plans.
46

1 **Q. Were there times where you were asked to provide a CAD file?**

2
3 A. Yes, and we provided it, and OPSB had in its possession several of our digital CAD files.

4
5 **Q. And would the CAD Files show the 45'?**

6
7 A. Yes.

8
9 **Q. Please describe Attachment DB-13 to your testimony.**

10
11 A. Attachment DB-13 is the Opinion and Order Granting the Certificate in this proceeding.

12
13 **Q. Have you reviewed Attachment DB-13?**

14
15 A. Yes.

16
17 **Q. Does the Opinion and Order speak to the manner in which this Project should be constructed?**

18
19
20 A. Yes, it states on page 24, "[t]he Facility shall be installed at Hecate's proposed site as presented in the application and modified by supplemental filings."

21
22
23 **Q. Please describe Attachment DB-14 to your testimony.**

24
25 A. Attachment DB-14 is the Joint and Supplemental Stipulations filed in this proceeding.

26
27 **Q. Did you review Attachment DB-14?**

28
29 A. Yes.

30
31 **Q. Did you see the following language from the January 25, 2021, Supplemental Joint Stipulation: "The Applicant shall install the facility, utilize equipment and construction practices and implement mitigation measures as described in the application and as modified and/or clarified in supplemental filings, replies to data requests, and recommendations in the Staff Report of Investigation, as modified by the Joint Stipulation and Recommendation or as further modified by the Supplemental Joint Stipulation and Recommendation"?**

32
33
34
35
36
37
38
39 A. Yes, I did.

40
41 **Q. What is your understanding of the quoted language above?**

42
43 A. That language is simply stating that the Project must be installed in accordance with the Application as modified by supplemental filings and replies.

1 **Q. Subsequent to the Application and the Supplemental Joint Stipulation did EVS make**
2 **any supplemental applications and filings?**

3
4 A: Yes, EVS filed the 30%, 60% , 90% and final drawings all showing a 45-foot setback and
5 to my knowledge all replies were in the affirmative meaning approval.
6

7 **Q. Was EVS asked to prepare certain work product for submission to OPSB.**
8

9 A. Yes, EVS prepared drawings, provided CAD files and then those were presumably filed
10 with OPSB, which is what we were told.
11

12 **Q. Is it your understanding that the 45' setback was appropriate and approved?**
13

14 A. Yes, it was. It was entirely consistent with Highland County's 45' setback, and we never
15 came close to 45'. All of EVS' drawings included 45' setbacks. . EVS' Basis of Design
16 was a 45' setback. The owner submitted EVS' drawings, all of which contained a 45'
17 setback, and the construction was approved to go ahead based upon the 45' setback.
18

19 **Q. Please describe Attachment DB-15 to your testimony.**
20

21 A. Attachment DB-15 is an EVS drawing named "Average Setback Summary".
22

23 **Q. What is the purpose of Attachment DB-15?**
24

25 A. EVS created Attachment DB-14 to demonstrate where the claimed setback violation is,
26 how much surface area is impacted by the claimed setback violation, and how much the
27 average setback is.
28

29 **Q. Can you describe where on Attachment DB-15 you would find the claimed setback**
30 **violation?**
31

32 A. Yes, it is small blue marked area.
33

34 **Q. With regard to the average setback calculation, what is that calculation, and what is**
35 **the significance of that calculation.**
36

37 A. The average setback is 177.2-ft, and the significance of that is that it demonstrates how
38 small the now alleged setback violation is.
39

40 **Q. Can you describe for us how these solar arrays work?**
41

42 A. Solar projects are complex systems in which the small and silica panel produces a DC
43 current which is combined multiple times and converted to AC which it is again combined
44 multiple times until it reached the electrical grid. The systems must be balanced and
45 working as designed to provide stable power to the grid. It is similar to a car engine in
46 which all the parts are necessary to have the system operating smoothly. If you take out a

1 valve or a connecting rod the engine will not run. It may sputter along but it will not operate
2 smoothly and produce the power necessary to serve its intended purpose. In this case, the
3 panels are the pistons which, like the connected wires pushing current. Th connecting rods
4 are the inverters which convert the power to AC. That in turn turns the crankshaft, which
5 is the collection system, and ultimately delivers power to the grid. The disruption of any
6 one of these parts causes the system to fail.
7

8 **Q. Given how the system works together, can you please explain the impact of moving**
9 **the corners of the impacted areas to achieve a 100-foot setback.**

10
11 A. Yes, since the system has to operate together there is no possible way to just move the
12 impacted corners. In order to achieve a 100-foot setback now that the system is designed
13 and partially installed the entire system must be re-worked and redesigned including some
14 removals and reconstructions or modifications of installed components. The economic
15 impact of re-designing and re-configuring the entire system to address minimal intrusions
16 into a 100-foot setback envelope is wasteful.
17

18 **Q. Does this conclude your testimony?**

19
20 A. Yes. However, I reserve the right to submit supplemental testimony as new information
21 becomes available.
22
23
24
25
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CERTIFICATE OF SERVICE

I certify that The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document as well as the subsequently and individually filed Attachments referenced in this Testimony on the parties referenced on the service list of the docket card who have electronically subscribed to the case. I am also sending electronic courtesy copies through a file sharing client to all parties.

/s/ Robert Dove (0092019

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Case No(s). 20-1288-EL-BGN

Summary: Text Direct Testimony of Dan Bowar electronically filed by Mr. Robert
Dove on behalf of EVS, Inc. .