

STATE OF IOWA
BEFORE THE IOWA UTILITIES BOARD

IN RE:)
) DOCKET NO. E-22386
ITC MIDWEST LLC)
)
)

DIRECT TESTIMONY
OF
NATHANIEL BAER

ON BEHALF OF
IOWA ENVIRONMENTAL COUNCIL, CLEAN GRID ALLIANCE, FRESH ENERGY, AND
MINNESOTA CENTER FOR ENVIRONMENTAL ADVOCACY
("CLEAN ENERGY INTERVENORS")

September 27, 2019
Revised October 1, 2019

1 **Q. Please state your name, business name and address, and role in this proceeding.**

2 A. My name is Nathaniel Baer. I am an Energy Policy Specialist with the Iowa
3 Environmental Council located at 505 Fifth Ave., Suite 850, in Des Moines, Iowa. I
4 appear here in my capacity as an expert witness on behalf of the Clean Energy
5 Intervenors.

6

7 **Q. Please describe your background.**

8 A. I have a bachelor of arts degree from Earlham College in Richmond, Indiana and a law
9 degree from the University of Iowa College of Law in Iowa City, although I am not a
10 practicing attorney. I have worked for the Iowa Environmental Council (“IEC”) since
11 2007. The Iowa Environmental Council is a 501(c)(3) non-profit, member-based
12 corporation that works to advance public policies that provide a safe, healthy
13 environment and sustainable future for all Iowans. In my capacity at IEC, I have worked
14 on a wide range of energy policy issues, including renewable energy, transmission,
15 energy efficiency, biofuels, and transportation. This has included work on state and
16 federal legislation and administrative rules both with federal and state agencies, as well as
17 a range of dockets at the Iowa Utilities Board. I have served on energy research and
18 policy stakeholder committees established by the Iowa legislature, Midwestern
19 Governors Association, Iowa Department of Transportation, University of Northern
20 Iowa’s Center for Energy and Environmental Education, and the Midcontinent Power
21 Sector Collaborative. I recently served on the Iowa Energy Resources working group for
22 then-Lt. Gov. Reynolds’s Iowa Energy Plan and served on the board of directors for the
23 regional non-profit organization Clean Grid Alliance. In 2018, my family moved to

1 Maine and I have continued work with IEC focused on Iowa energy issues.

2
3 **Q. Have you testified with the Iowa Utilities Board before?**

4 A. Yes. I provided testimony in MidAmerican Energy's last general rate case, RPU-2013-
5 0004; in multiple MidAmerican and Interstate Power and Light applications for advanced
6 ratemaking principles for wind energy projects, including RPU-2015-0002, RPU-2016-
7 0001, RPU-2016-0005, and RPU-2017-0002; and in the emissions plan and budget
8 dockets EPB-2016-0156 and EPB-2016-0150. In addition, I have drafted or assisted in
9 drafting our organization's comments or joint comments in various dockets before the
10 Board, including NOI-2006-0004, NOI-2009-0002, NOI-2011-0002, NOI-2011-0003,
11 NOI-2014-0001, NOI-2014-0002, NOI-2015-0001, RMU-2014-0007, RMU-2016-0003,
12 RMU-2016-0006, RMU-2016-0018, RMU-2017-0002, TF-2012-0546, TF-2012-0574,
13 TF-2014-0294, TF-2014-0320, TF-2016-0290, TF-2016-0294, TF-2016-0321, TF-2016-
14 0323, TF-2017-0294, DRU-2017-0001, DRU-2017-0002, SPU-2017-0001, AEP-2017-
15 0060, E-22116, and E-22269.

16
17 **Q. Please summarize your testimony.**

18 A. My testimony is focused on the siting and routing for the Cardinal-Hickory Creek
19 transmission line. I have reviewed route options and analyses related to Cardinal-Hickory
20 Creek over the past seven years. I support the final route choice in Iowa and the use of
21 the Mississippi River ("River") crossing location from Iowa into Cassville, Wisconsin,
22 including the use of the Upper Mississippi National Wildlife and Fish Refuge ("Refuge")
23 on the Iowa side of the route for this River crossing.

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Q. Has IEC had opportunities to provide comments already regarding the route for this transmission line?

A. Yes. IEC filed comments directly with ITC Midwest LLC (“ITC Midwest”) in 2013 and 2015 as part of an ongoing stakeholder process with ITC Midwest and Iowa-based environment and conservation groups. IEC filed comments with the U.S. Department of Agriculture regarding the scoping for the federal Environmental Impact Statement (EIS) review and on the draft EIS, in 2017 and 2019 respectively. IEC also filed comments with U.S. Fish and Wildlife regarding the Alternative Crossings Analysis in 2016. Finally, IEC filed comments earlier this year on the draft EIS published by the Wisconsin Department of Natural Resources and the Public Service Commission of Wisconsin.

Q. You referenced a stakeholder process with ITC Midwest. Please elaborate.

A. After MISO approved the portfolio of Multi-Value Project transmission lines in the region in 2011, IEC and several of our partner and member organizations requested the opportunity to discuss with ITC Midwest the development of these transmission lines, including siting and routing. We received an enthusiastic response and subsequently held periodic meetings between ITC Midwest, IEC, and some of our member or partner organizations with an interest and expertise in the environment and conservation issues related to transmission lines. Those groups included, for example, Iowa Audubon, Iowa Natural Heritage Foundation, The Nature Conservancy, and the Center for Rural Affairs. This group met periodically with ITC Midwest and sometimes its engineering consultants to discuss issues such as how to avoid sensitive habitat and private conservation

1 easements. These meetings included all of the MVP lines that ITC Midwest was involved
2 in, including MVP 3, 4, 5 and 7. MVP 5 is Cardinal-Hickory Creek.

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4 **Q. What was the process for Cardinal-Hickory Creek?**

5 A. The process for Cardinal-Hickory Creek was largely the same as the other MVP lines,
6 only much more extensive in terms of steps for review and analysis. ITC Midwest
7 solicited input from IEC and other organizations beginning in 2013 regarding siting and
8 routing for Cardinal-Hickory Creek. ITC Midwest shared a map of the initial study area,
9 which focused on Dubuque and Clayton counties, and requested initial feedback. In 2015,
10 ITC Midwest expanded the study area and shared a map that identified seven potential
11 Mississippi River crossing locations from Guttenberg to Dubuque, again requesting
12 feedback.¹ Periodic in-person meetings occurred throughout this time as well.

13
14 As the River crossing focused on the Cassville area options, the Alternative Crossings
15 Analysis and Macro-Corridor Study were completed in 2016 to provide additional
16 analysis on those options compared to other identified options. Similarly, once a
17 partnership developed with Dairyland Power Cooperative to co-locate Cardinal-Hickory
18 Creek with Dairyland's existing transmission line crossing the River (and crossing part of
19 the Refuge), the federal EIS process began as well. As I stated earlier, we reviewed and
20 provided comments on these steps or analyses where possible.

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¹ See Baer Direct Exhibit 1. This map is from the Alternative Crossing Analysis (page ES-5) and includes the same information on potential crossing locations that ITC Midwest shared in 2015. ITC Midwest et al, *Cardinal-Hickory Creek Transmission Line Project Alternative Crossings Analysis* (April 2016).

1 **Q. What else was part of your review?**

2 A. I consulted with the groups involved in the stakeholder process with ITC Midwest
3 regarding River crossing options. I also personally visited each identified crossing
4 location. Most of those visits also included a staff member from the Center for Rural
5 Affairs.

6

7 **Q. What did you conclude about the River crossing options?**

8 A. Of the seven options identified, four are not at existing transmission line crossings. There
9 are simply not many existing transmission lines that cross the River, which is also related
10 to the need for this line. ITC Midwest identified other types of infrastructure in some
11 locations, such as dams and bridges, in order to evaluate as many options as possible. The
12 crossing locations in Guttenberg and at Lock & Dam No. 11 (a bit north of Dubuque)
13 were not transmission lines, but dams. Two of the crossing locations in Dubuque were
14 associated with highway bridges rather than transmission lines. IEC concluded that co-
15 locating Cardinal-Hickory Creek with an existing transmission line would best minimize
16 environmental impacts and was much more preferable than introducing new transmission
17 infrastructure crossing the River. I discuss this in more detail below. This led us to
18 narrow the focus to an existing transmission crossing in the Dubuque area and to
19 Cassville, Wisconsin.

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21 **Q. Please elaborate on the Cassville area crossing options.**

22 A. The two River crossing options from Iowa to Cassville, Wisconsin are the Stoneman and
23 Nelson Dewey crossings. The Stoneman crossing option would result in upgrading the

1 existing 161 kV transmission line that traverses a section of the Refuge and crosses the
2 River on the south side of Cassville and adding the Cardinal-Hickory Creek line to the
3 upgraded line. The Nelson Dewey crossing option would move the existing 161 kV
4 transmission line slightly within the Refuge and co-locate the Cardinal-Hickory Creek
5 line with it, crossing the River on the north side of Cassville. The Nelson Dewey and
6 Stoneman options would allow for the retirement of an existing 69 kV line – it would not
7 be moved with the 161 kV line for the Nelson Dewey crossing. ITC Midwest’s proposed
8 route in this docket uses the Nelson Dewey crossing. (ITC Midwest, Exhibit B (Clayton
9 County) filed April 17, 2019).

10
11 **Q. What factors did you evaluate regarding the two Cassville area crossing options?**

12 A. There were a few considerations that led IEC to support the Cassville crossing options.
13 First, the co-location of Cardinal-Hickory Creek with the existing transmission line is a
14 continued use rather than a new use of the area. Today there is a single existing
15 transmission line that traverses a portion of the Refuge and crosses the River into
16 Cassville, Wisconsin. After Cardinal-Hickory Creek is built, there will be a single
17 transmission line that traverses a portion of the Refuge and crosses the River into
18 Cassville. The new line will include the wires from the existing 161 kV transmission line
19 and from Cardinal-Hickory Creek.

20
21 Second, current land uses in this part of the Refuge include a parking lot, access road to
22 the parking lot, a ferry landing, and an agricultural field. These uses are more compatible
23 with the continued use of an existing transmission line than one might expect in the

1 Refuge. For the Nelson Dewey crossing location in particular, the route closely follows
2 the access road and is near the ferry landing and adjacent to the agricultural field.

3
4 Third and finally, the use of the Cassville crossing options allows for right of way for the
5 rest of the route to maximize use of existing infrastructure, including roads and existing
6 transmission lines. In particular, there is an existing 138 kV transmission line from
7 Cassville to the substation in Montfort, Wisconsin, which is a significant amount of the
8 overall route. Other River crossing options would have likely required more new
9 transmission corridors or new right of way, as there are few or no existing transmission
10 lines from other River crossing locations that align with significant stretches of the route,
11 especially transmission lines above 69 kV. This includes the Dubuque option with an
12 existing transmission line crossing the River. Maximizing the use of existing right of way
13 for the full route is important for minimizing its overall environmental impact. We have
14 prioritized use of existing right of way for each MVP line to help minimize the potential
15 loss of tree cover, habitat, and similar impacts compared to establishing new right of way
16 (recognizing that new right of way in some existing land uses, such as agricultural land,
17 are not likely to result in loss of tree cover or habitat). In our analysis of the six route
18 options evaluated by USDA in the draft EIS, we found that Alternative 6 – the preferred
19 route using the Cassville crossing options – allowed for use of existing right of way
20 (ROW) for between 92% and 96% of the total route.²

² The draft EIS states that Alternative 6 has 101 total miles in the main report at p. 81, but Appendix C, Tables C-3 and C-4 show Alternative 6 as having 105 total miles. I include both the 92% and 96% use of existing ROW to account for both amounts of total miles.

1 **Q. What is your conclusion about the use of the Nelson Dewey crossing?**

2 A. Siting the line for the Nelson Dewey crossing location and then removing the existing
3 transmission infrastructure related to the Stoneman crossing should improve outcomes for
4 the Refuge. The existing land use in the corridor for the Stoneman crossing is more
5 naturalized than the land use of the road, farm field, and ferry landing for the Nelson
6 Dewey corridor and crossing.³ Moving the existing 161 kV line out of the naturalized
7 area and to the area adjacent to the road and farm field – and retiring the existing 69 kV
8 line – would allow for complete revegetation of this more naturalized section of the
9 Refuge. Using the Nelson Dewey crossing would then group the road, ferry, farm field,
10 and transmission line in a single place. The Nelson Dewey crossing also results in fewer
11 structures and fewer miles of right of way within the Refuge than the Stoneman crossing.⁴
12 For these same reasons, use of the Nelson Dewey crossing should offer benefits to the
13 Refuge compared to continued use of the existing transmission infrastructure in place
14 today.

15
16 **Q. What is your overall conclusion about the route for Cardinal-Hickory Creek?**

17 A. I fully support the final proposed route in this docket for the Cardinal-Hickory Creek line.
18 ITC Midwest engaged in a thorough, deliberative, and collaborative process to evaluate
19 all options. The proposed route is a reasonable and, in fact, preferable choice compared to
20 the alternatives. The proposed route supports Cardinal-Hickory Creek having a

³ See Baer Direct Exhibit 2. This map provides detail on the Cassville area crossing options from the Alternative Crossings Analysis. Note that this map includes the actual location of the existing transmission line and Stoneman crossing location but only an illustrative location for the line if the Nelson Dewey crossing is used. ITC Midwest's Exhibit B route map includes the final route for the Nelson Dewey crossing location.

⁴ See, e.g., Burns & McDonnell et al, *Cardinal-Hickory Creek Transmission Line Project Alternative Crossings Analysis* (2016) at 8-2.

1 reasonable relationship to an overall plan of transmitting electricity in the public interest.

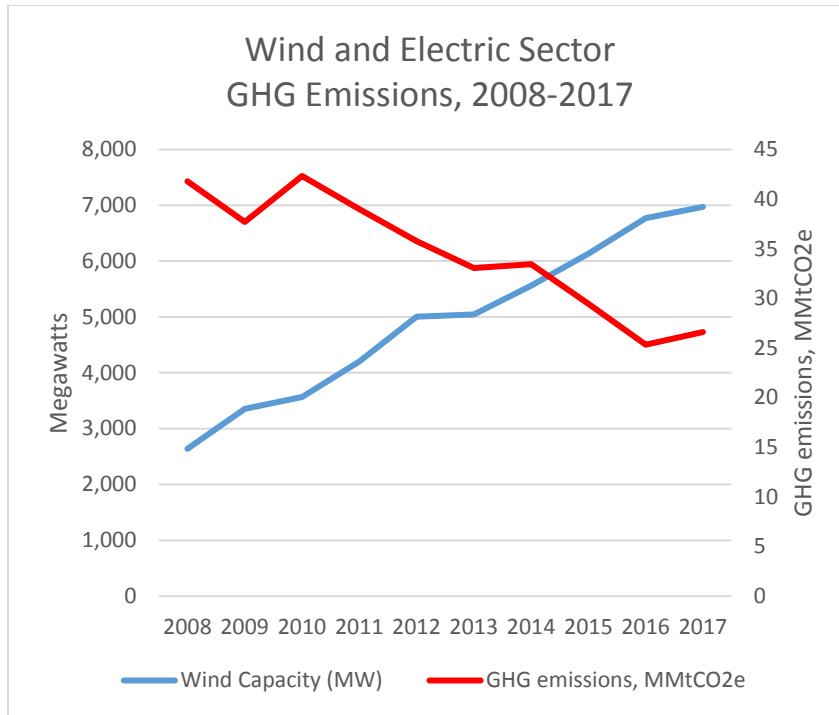
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3 **Q. Why is this transmission line important for Iowa?**

4 A. Cardinal-Hickory Creek is important because it is essential to continued renewable
5 energy development in Iowa. Iowa is a national leader on wind energy, and this national
6 leadership has delivered a number of benefits to Iowa. There are important economic and
7 environmental benefits from renewable energy development in Iowa. For example, the
8 wind industry accounted for between 9,001 and 10,000 jobs in 2018.⁵ Wind projects
9 generate local property tax revenue to counties across the state, which use that revenue
10 for a wide range of public benefits and services including road and bridge construction,
11 local schools, hospitals and health services, community colleges, agricultural extension,
12 and more. As wind capacity has increased each year over the past decade, Iowa's use of
13 coal – all of which is imported from other states – has declined significantly, along with
14 greenhouse gas and other emissions. This chart illustrates the two trends:⁶

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⁵ AWEA, *Wind Energy in Iowa* (updated July 2019) available at <https://www.awea.org/resources/fact-sheets/state-facts-sheets>

⁶ Iowa DNR, *2017 Iowa Statewide Greenhouse Gas Emissions Inventory Report* (2018); EIA, *Iowa Electric Profile* (2018).



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Iowa landowners, all of whom host wind turbines voluntarily, collectively receive an estimated \$20M to \$30M annually in wind turbine lease payments.⁷ The lease payments provide income stability to rural Iowans in the face of an agricultural economy that can be volatile or unpredictable.

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Transmission infrastructure has been an essential component of the growth in wind energy in Iowa. The recent development of MVP 3, 4, and 7 has supported additional wind projects across the state, which would likely have been impossible to develop without that new transmission infrastructure. Many of these individual wind projects have been part of Alliant’s New Wind I and New Wind II projects and MidAmerican’s Wind X, Wind XI, and Wind XII projects, all of which have had applications for advanced

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⁷ AWEA, *Wind Energy in Iowa*.

1 ratemaking principles approved by the Board.

2
3 Although most counties in Iowa have a wind resource that would support utility-scale
4 wind development, the windiest parts of the state tend to be the more rural areas in
5 western and northern Iowa. Without transmission access, those areas would not be able to
6 see wind development. MVP 3 and 4 helped provide additional transmission access to
7 these areas. MVP 7 opened up opportunities for renewable energy to flow south as well
8 as for wind development in southern Iowa, with projects following. For example, there
9 are wind projects newly operational or under active development in Mahaska and
10 Poweshiek counties. Cardinal-Hickory Creek provides an essential link to allow Iowa's
11 renewable energy to flow east, as described in more detail by Witness Goggin. This
12 transmission line is required for current wind projects to operate at full capacity and for
13 new wind projects to be built. The important benefits that renewable energy provides to
14 Iowa depend on expanding transmission, including Cardinal-Hickory Creek.

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16 **Q. Does this conclude your direct testimony?**

17 A. Yes.

**STATE OF IOWA
BEFORE THE IOWA UTILITIES BOARD**

IN RE:)
) DOCKET NO. E-22386
ITC MIDWEST LLC)
)
)

AFFIDAVIT OF NATHANIEL BAER

STATE OF Maine)
)
COUNTY OF Waldo)

I, Nathaniel Baer, being first duly sworn on oath, state that I am the same Nathaniel Baer identified in the testimony filed in this docket on October 1, 2019, that I have caused the testimony and exhibits to be prepared and am familiar with its contents, and that the testimony and exhibits is true and correct to the best of my knowledge and belief as of the date of this affidavit.

/s/ Nathaniel Baer
Nathaniel Baer
October 1, 2019

Subscribed and sworn to me this 1st day of October, 2019.

/s/ Alison M. Applegate
Alison M. Applegate

Notary Public in and for the
State of Maine