

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

In the Matter of the Application of Grain Belt)
Express, LLC for a Siting Permit for the)
Construction of Two 345 kV Transmission Lines) Docket No. 24-GBEE-790-STG
and Associated Facilities through Gray, Meade,)
and Ford Counties, Kansas.)

DIRECT TESTIMONY OF

DR. AL TAMIMI

ON BEHALF OF

SUNFLOWER ELECTRIC POWER CORPORATION

July 3, 2024

1 **Q. Please state your name.**

2 A. My name is Al Tamimi.

3 **Q. By whom are you employed?**

4 A. I am employed by Sunflower Electric Power Corporation (“Sunflower”).

5 **Q. What is your position with Sunflower?**

6 A. I am Senior Vice President and Chief Operations Officer Transmission for
7 Sunflower.

8 **Q. Please describe your educational background and professional experience.**

9 A. I joined Sunflower in 2001 and was promoted to Vice President of Transmission
10 Planning and Policy in 2015. I was promoted to Senior Vice President and Chief
11 Operations Officer Transmission in 2023. My responsibilities include overseeing
12 all aspects of transmission facilities to meet the needs of Sunflower and those we
13 serve.

14 I hold a master’s degree in electrical engineering from Wichita State University
15 and a Doctor of Philosophy (Ph.D.) in electrical engineering from Kansas State
16 University.

17 I am widely published in industry publications including the world’s largest
18 technical professional society, The Institute of Electrical and Electronics
19 Engineers (“IEEE”). I am also a senior member of IEEE. I became a licensed
20 professional engineer in June of 2005. I also serve on several Southwest Power
21 Pool, Inc. (“SPP”) working groups and committees, including the Economic
22 Studies Working Group (“ESWG”), Markets and Operations Policy Committee
23 (“MOPC”), Synchronphasor Task Force, Chair for the Generation Interconnection

1 Improvement Task Force (“GIITF”), a voting member on the Holistic Integrated
2 Tariff Team (“HITT”), and Chair for the High Priority Incremental Load Study
3 (“HPILs”) Task Force.

4 **Q. Have you previously testified before the Commission?**

5 A. Yes. I have provided testimony in Docket Nos. 11-GIME-597-GIE, 17-KPPE-092-
6 COM, and 18-KPPE-343-COC.

7 **Q. Who is Sunflower, and why is its testimony relevant in this docket?**

8 A. Sunflower is a generation and transmission electric utility operating in the state of
9 Kansas on a non-profit cooperative basis, with its principal place of business
10 located in Hays, Kansas. Sunflower is a coalition of six Kansas consumer-owned
11 cooperatives and one corporation wholly owned by one of the six Kansas
12 consumer-owned cooperatives¹ (collectively the “Members”).

13 Sunflower owns transmission lines of various voltage levels in the general area
14 traversed by the AC Collector Lines (as defined in the Application). In addition,
15 Sunflower’s Members own distribution facilities that connect to those same
16 Sunflower transmission lines. Those Member distribution facilities serve Kansas
17 retail ratepayers in western Kansas. The reliability of the electric grid can have
18 economic impacts on Kansas retail ratepayers. The less reliable an electrical
19 facility, the greater the negative economic impact to the customers it serves.

20 **Q. What is the purpose of your testimony?**

¹ The seven electric utilities and their headquarters are as follows: Lane-Scott Electric Cooperative, Inc., Dighton; Pioneer Electric Cooperative, Inc., Ulysses; Southern Pioneer Electric Company, Ulysses; Prairie Land Electric Cooperative, Inc., Norton; The Victory Electric Cooperative Association, Inc., Dodge City; Western Cooperative Electric Association, Inc., WaKeeney; and Wheatland Electric Cooperative, Inc., Scott City.

1 A. My understanding from the Application is that the Commission must take into
2 consideration in this docket “the benefit to both consumers in Kansas and
3 consumers outside the state and economic development benefits in Kansas.”² In
4 addition, to determine “the necessity for ... the proposed electric transmission
5 line,” the Commission historically has applied standards similar to those applied
6 in a Certificate of Convenience and Necessity (“CCN”) proceeding. As in CCN
7 proceedings, the Commission term “necessity” does not require a finding of
8 absolute need, but rather a finding of public need without which the public is
9 inconvenienced to the point of being handicapped.³ The Commission also
10 considers the economic impact on Kansas, including construction jobs, taxes,
11 and landowner payments for easements.⁴ The Commission has also placed a
12 high value on a “robust transmission infrastructure [that] supports economic
13 growth and development” over the long term.⁵ The purpose of my testimony is to
14 address the economic impact on Kansas, including Kansas ratepayers that are
15 member-owners of Sunflower’s member-owner distribution cooperatives.

16 **Q. How will Grain Belt Express, LLC (“Grain Belt”) recover the costs of the AC**
17 **Collector Lines?**

18 A. According to the Direct Testimony of Kevin Chandler on Behalf of Grain Belt
19 Express, LLC filed in this docket, “[t]he costs of the AC Collector Lines will be

² Application for Transmission Line Siting Permits, Docket No. 24-GBEE-790-STG, ¶ 9 (filed May 31, 2024)(hereinafter referred to as the “Application”); K.S.A. 66-1,180.

³ *Id.* at ¶ 21; Order Granting Siting Permit, Docket No. 09-ITCE-729-MIS, ¶ 39 (filed July 13, 2009).

⁴ Application, at ¶ 22; Amended Order Granting Siting Permit, Docket No. 13-ITCE-677-MIS, ¶ 25 (filed Sept. 17, 2013); Order Granting Siting Permit, Docket No. 13-GBEE-803-MIS, ¶¶ 22-23 (filed Nov. 7, 2013).

⁵ Application, at ¶ 22; Amended Order Granting Siting Permit Docket No. 13-ITCE-677-MIS, ¶ 26 (filed Sept. 17, 2013).

1 paid for by generation projects seeking interconnection into Grain Belt Express.
2 These costs will be assessed through Grain Belt Express' generator
3 interconnection process. Grain Belt Express will not be seeking recovery of any
4 capital costs from Kansas ratepayers.”⁶

5 **Q. How will the AC Collector Lines affect the retail electric rates for customers**
6 **in Kansas?**

7 A. Again, according to Chandler Direct, “energy customers in Kansas will not bear
8 capital costs associated with the AC Collector System.”⁷

9 **Q. Based on that testimony in Chandler Direct, does that mean that there will**
10 **not be any negative economic impact to Kansas retail ratepayers?**

11 A. No, but to be fair, I do not believe that is what Chandler Direct is asserting. I
12 commend Grain Belt for making efforts to keep costs of the AC Collector Lines
13 from being paid for by Kansas retail ratepayers. However, I believe there may be
14 additional economic impacts of the AC Collector Lines that Grain Belt does not
15 address. When specifically asked about the effect of the AC Collector Lines on
16 Kansas retail electric rates, Chandler Direct stated that only the “capital costs
17 associated with the AC Collector System” will not be borne by energy customers
18 in Kansas.⁸ There may be other economic impacts outside of the recovery of
19 capital costs of the AC Collector Lines.

⁶ Direct Testimony of Kevin Chandler on Behalf of Grain Belt Express, LLC, Docket No. 24-GBEE-790-STG, p. 12, lines 2-5 (filed May 31, 2024)(hereinafter referred to as “Chandler Direct”).

⁷ *Id.* at p. 12, lines 11-16.

⁸ *Id.*

1 **Q. What other economic impacts might the AC Collector Lines have outside of**
2 **recovery of the capital costs of the AC Collector Lines?**

3 A. To answer that, I need to first describe some of the potential impacts of the AC
4 Collector Lines. First, the transient impact of adding large AC Collector Lines to
5 the larger direct current line is still unknown. Each AC Collector Line will carry a
6 large amount of power and any interruption that occurs may result in a transient
7 event (i.e. flicker, voltage dips etc.), which will be experienced by customers in
8 and around Dodge City. If the transient impact is significant, in addition to
9 residential load impact, the result may be that a number of large industrial loads
10 experience an interruption in electric service. Interruptions in service have real
11 economic impacts on large industrial customers.

12 Second, the transmission system around Dodge City is considered a weak
13 system with little inertia to help mitigate large flickers. The Sunflower-owned Fort
14 Dodge Station (located close to Dodge City) large conventional generator has not
15 run the majority of 2024 due to the SPP market dispatch. That results in a lack of
16 any nearby rotating mass to help mitigate large transients. Sunflower's
17 understanding is that the AC Collector Lines carry more power than other
18 generator lead lines in the area. A large power drop on the AC Collector Lines in
19 a weak grid area like Dodge City has the potential to create negative impact on
20 electric loads in the area.

21 Third, we are assuming that the AC Collector Lines are in parallel with and near
22 Sunflower's three-terminal line from East Liberal to Cimarron River to Crooked
23 Creek, which creates potential protection concerns. Protection of three terminal

1 lines is not preferable, and difficult to protect with relays. To the extent there is
2 any introduction of mutual impedance to Sunflower's three-terminal line, such
3 impedance would add complexity as the parallel path will cause the line
4 impedance to add or subtract, depending on fault current directions.

5 **Q. When describing some of the benefits of the Grain Belt Express Project,**
6 **Chandler Direct concludes: "Additionally, because the Grain Belt Express**
7 **Project will have the capability to reverse power flow, the Project could be**
8 **available to provide power from MISO or PJM in the event of an emergency**
9 **or grid outage in SPP, providing significant reliability benefits."**⁹ **Has that**
10 **assertion been studied and proven by the Southwest Power Pool, Inc.**
11 **("SPP")?**

12 A. To the best of my knowledge, no. If SPP, MISO, or PJM has studied that issue
13 and Grain Belt has access to the study, I would certainly be interested in
14 reviewing it. It is also my understanding that SPP and MISO have approved
15 transmission projects that are already intended to strengthen the tie between
16 SPP and MISO for many scenarios, including emergencies.

17 **Q. You have described a lot of technical issues, but how does that translate**
18 **into economic impacts?**

19 A. From the outset, Sunflower will need to study these issues to determine their
20 extent. Studying these issues may result in costly third-party engineering studies,
21 the cost of which would flow down to Sunflower's Members' customers if

⁹ *Id.* at p. 13, lines 11-13.

1 Sunflower bears those costs. In addition, those studies may conclude that
2 additional mitigation (ex. modifications or capital investment) is required. The
3 same cost concerns exist with respect to that mitigation. If the potential
4 interruptions outlined above become a reality, they can result in a negative
5 economic impact on customer load, especially large industrial loads.

6 **Q. Are you asserting that the AC Collector Lines have little or no benefits to**
7 **Kansas ratepayers?**

8 A. To be very clear, no I am not taking that position, and that is not the purpose of
9 my testimony. I do not disagree with many of the assertions regarding benefits
10 listed in the Application and corresponding testimony. However, I am simply
11 saying that even though a project may have benefits, as well as positive
12 economic impacts, it is important to understand and weigh the negative
13 consequences and negative economic impacts against those benefits and
14 positive economic impacts. While the AC Collector Lines may create benefits and
15 positive economic impact, it is not abundantly clear yet what overall negative
16 economic impacts they may have with regard to the issues I outlined above.
17 What is even less clear is whose responsibility it is to pay for the costs of those
18 negative economic impacts. The ultimate location of the AC Collector Lines
19 determined in this docket will drive those economic impacts, positive or negative.
20 Before making the ultimate determination on location, it is important for Kansas
21 retail ratepayers to understand those negative economic impacts and who bears
22 their cost responsibility. Without a commitment from Grain Belt to pay for the
23 costs associated with the issues outlined above, Sunflower's concern is that its

1 Members' customers will be responsible to pay for the costs of studying and
2 mitigating issues created by the location of the AC Collector Lines. Sunflower is
3 asking the Commission to consider the negative economic impact to Kansas
4 retail ratepayers in this docket.

5 **Q. Does that conclude your testimony?**

6 A. Yes.

VERIFICATION OF AL TAMIMI

Al Tamimi, being first duly sworn, deposes and says that he is the Al Tamimi referred to in the foregoing document entitled "Direct Testimony of Al Tamimi" before the State Corporation Commission of the State of Kansas and that the statements therein were prepared by him or under his direction and are true and correct to the best of his information, knowledge and belief.



Al Tamimi

Date: July 3, 2024

Direct Testimony of Dr. Al Tamimi
July 3, 2024

CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that on this 3rd day of July 2024, the above and foregoing *Direct Testimony of Dr. Al Tamimi* was submitted to the following parties via electronic mail:


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Service list as of June 5, 2024

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