INTERCONNECTION FACILITIES STUDY REPORT

GEN-2021-017

Published November 2025

By SPP Generator Interconnections Dept.

REVISION HISTORY

DATE OR VERSION NUMBER	AUTHOR	CHANGE DESCRIPTION
November 20, 2025	SPP	Initial draft report issued.

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SUMMARY

INTRODUCTION

This Interconnection Facilities Study (IFS) for Interconnection Request GEN-2021-017 is for a 37.5 MW generating facility located in Cloud & Mitchell County, KS. The Interconnection Request was studied in the DISIS-2021-001 Impact Study for ERIS. The Interconnection Customer's requested in-service date is 12/31/2027.

The interconnecting Transmission Owner, ITC Great Plains (ITCGP), performed a detailed IFS at the request of SPP. The full report is included in Appendix A. SPP has determined that full Interconnection Service will be available after the assigned Transmission Owner Interconnection Facilities (TOIF), Non-Shared Network Upgrades, Shared Network Upgrades, Contingent Network Upgrades, and Affected System Upgrades that are required for full interconnection service are completed.

The primary objective of the IFS is to identify necessary Transmission Owner Interconnection Facilities, Network Upgrades, other direct assigned upgrades, cost estimates, and associated upgrade lead times needed to grant the requested Interconnection Service.

PHASE(S) OF INTERCONNECTION SERVICE

It is not expected that Interconnection Service will occur in phases. However, full Interconnection Service will not be available until all Interconnection Facilities and Network Upgrade(s) can be placed in service.

COMPENSATION FOR AMOUNTS ADVANCED FOR NETWORK UPGRADE(S)

FERC Order ER20-1687-000 eliminated the use of Attachment Z2 revenue crediting as an option for compensation. The Incremental Long Term Congestion Right (ILTCR) process will be the sole process to compensate upgrade sponsors as of July 1st, 2020.

INTERCONNECTION CUSTOMER INTERCONNECTION FACILITIES

The Generating Facility is proposed to consist of nine (9) 4.3 MW Vestas V150-4.3MW turbines for a total generating nameplate capacity of 37.5 MW.

The Interconnection Customer's Interconnection Facilities to be designed, procured, constructed, installed, maintained, and owned by the Interconnection Customer at its sole expense include:

- 34.5 kV underground cable collection circuits;
- 34.5 kV to 345 kV transformation substation with associated 34.5 kV and 345 kV switchgear;
- One 345 kV/34.5 kV 54/72/90 MVA (ONAN/ONAF/ONAF) step-up transformer to be owned and maintained by the Interconnection Customer at the Interconnection Customer's substation;
- An approximately 21.5 mile overhead 345 kV line to connect the Interconnection Customer's substation to the Point of Interconnection ("POI") at the 345 kV bus at existing Transmission Owner substation ("Elm Creek 345 kV interconnection substation") that is owned and maintained by Transmission Owner;
- All transmission facilities required to connect the Interconnection Customer's substation to the POI;
- Equipment at the Interconnection Customer's substation necessary to maintain a composite power delivery at continuous rated power output at the high-side of the generator substation at a power factor within the range of 95% lagging and 95% leading in accordance with Federal Energy Regulatory Commission (FERC) Order 827. The Interconnection Customer may use inverter manufacturing options for providing reactive power under no/reduced generation conditions. The Interconnection Customer will be required to provide documentation and design specifications demonstrating how the requirements are met; and,
- All necessary relay, protection, control and communication systems required to protect Interconnection Customer's Interconnection Facilities and Generating Facilities and coordinate with Transmission Owner's relay, protection, control and communication systems.

TRANSMISSION OWNER INTERCONNECTION FACILITIES AND NON-SHARED NETWORK UPGRADE(S)

To facilitate interconnection, the interconnecting Transmission Owner will perform work as shown below necessary for the acceptance of the Interconnection Customer's Interconnection Facilities.

Table 1 and **Table 2** list the Interconnection Customer's estimated cost responsibility for Transmission Owner Interconnection Facilities (TOIF) and Non-Shared Network Upgrade(s) and provides an estimated lead time for completion of construction. The estimated lead time begins when the Generator Interconnection Agreement has been fully executed.

Table 1: Transmission Owner Interconnection Facilities (TOIF)

Transmission Owner Interconnection Facilities (TOIF)	Total Cost Estimate ($)	Allocated Percent (%)	Allocated Cost Estimate ($)
Transmission Owner's Elm Creek 345 kV interconnection substation GEN-2021-017 Interconnection (TOIF) (UID 157051): Interconnection upgrades and cost estimates needed to interconnect the following IC facility, GEN-2021-017 (37.5/Wind), into the Point of Interconnection (POI) at Elm Creek 345 kV Substation. Estimated Lead Time: 36 Months	$0	100.00%	$0
Total	**$ 0**		**$ 0**

Table 2: Non-Shared Network Upgrade(s)

Non-Shared Network Upgrades Description	ILTCR	Total Cost Estimate ($)	Allocated Percent (%)	Allocated Cost Estimate ($)
Transmission Owner's Elm Creek 345 kV interconnection substation GEN-2021-017 Interconnection (Non-shared NU) (UID 157049): Interconnection upgrades and cost estimates needed to interconnect the following IC facility, GEN-2021-017 (37.5/Wind), into the Point of Interconnection (POI) at Elm Creek 345 kV Substation. Estimated Lead Time: 36 Months	Ineligible	$0	100.00%	$0

Non-Shared Network Upgrades Description	ILTCR	Total Cost Estimate ($)	Allocated Percent (%)	Allocated Cost Estimate ($)
Transmission Owner's Upgrade Terminal Equipment on the NMANHT6 to ELMCREK6 230 kV line Ckt 1 to achieve a minimum rating of 439 MVA (UID 170650): Upgrade Terminal Equipment on the NMANHT6 to ELMCREK6 230 kV line Ckt 1 to achieve a minimum rating of 439 MVA. Estimated Lead Time 36 Months	Eligible	$50,000	100.00%	$50,000
Evergy's Upgrade Terminal Equipment on the NMANHT6 to ELMCREK6 230 kV line Ckt 1 to achieve a minimum rating of 439 MVA (UID 170645): Upgrade Terminal Equipment on the NMANHT6 to ELMCREK6 230 kV line Ckt 1 to achieve a minimum rating of 439 MVA. Estimated Lead Time 48 Months	Eligible	$7,096,853	100.00%	$7,096,853
Total		**$7,146,853**		**$7,146,853**

SHARED NETWORK UPGRADE(S)

The Interconnection Customer's share of costs for Shared Network Upgrades is estimated in **Table 3** below.

Table 3: Interconnection Customer Shared Network Upgrade(s)

Shared Network Upgrades Description	ILTCR	Total Cost Estimate ($)	Allocated Percent (%)	Allocated Cost Estimate ($)
Evergy's Build a new 50 MVAR cap bank at Viola 138 kV (UID 170643): Build a new 50 MVAR cap bank at VIOLA 138 kV. Estimated Lead Time: 48 Months	Eligible	$1,270,333	0.46%	$5,812
Total		**$1,270,333**		**$5,812**

All studies have been conducted assuming that higher-queued Interconnection Request(s) and the associated Network Upgrade(s) will be placed into service. If higher-queued Interconnection Request(s) withdraw from the queue, suspend or terminate service, the Interconnection Customer's share of costs may be revised. Restudies, conducted at the customer's expense, will determine the Interconnection Customer's revised allocation of Shared Network Upgrades.

CONTINGENT NETWORK UPGRADE(S)

Certain Contingent Network Upgrades are **currently not the cost responsibility** of the Interconnection Customer but will be required for full Interconnection Service.

Table 4: Interconnection Customer Contingent Network Upgrade(s)

Contingent Network Upgrade(s) Description	Current Cost Assignment	Estimated In-Service Date
Evergy's Partly rebuild the Elm Creek to North Manhattan 230 kV line (UID 159067): Partly reconductor 2.9 mile of the Elm Creek to North Manhattan 230 kV line to achieve a minimum rating of 390 MVA	**$0**	12/31/2027

Depending upon the status of higher- or equally-queued customers, the Interconnection Request's in-service date is at risk of being delayed or Interconnection Service is at risk of being reduced until the in-service date of these Contingent Network Upgrades.

AFFECTED SYSTEM UPGRADE(S)

To facilitate interconnection, the Affected System Transmission Owner will be required to perform the facilities study work as shown below necessary for the acceptance of the Interconnection Customer's Interconnection Facilities. **Table 5** displays the current impact study costs provided by either MISO or AECI as part of the Affected System Impact review. The Affected System facilities study could provide revised costs and will provide each Interconnection Customer's allocation responsibilities for the upgrades.

Table 5: Interconnection Customer Affected System Upgrade(s)

Affected System Upgrades Description	Total Cost Estimate ($)	Allocated Percent (%)	Allocated Cost Estimate ($)
NA			
Total	**$0**		**$0**

CONCLUSION

After all Interconnection Facilities and Network Upgrades have been placed into service, Interconnection Service for 37.5 MW can be granted. Full Interconnection Service will be delayed until the TOIF, Non-Shared NU, Shared NU, Contingent NU, Affected System Upgrades that are required for full interconnection service are completed. The Interconnection Customer's estimated cost responsibility for full interconnection service is summarized in the table below.

Table 6: Cost Summary

Description	Allocated Cost Estimate
Transmission Owner Interconnection Facilities Upgrade(s)	$0
Non-Shared Network Upgrade(s)	$7,146,853
Shared Network Upgrade(s)	$5,812
Affected System Upgrade(s)	$0
Total	**$7,152,665**

Use the following link for Quarterly Updates on upgrades from this report: https://spp.org/spp-documents-filings/?id=18641

A draft Generator Interconnection Agreement will be provided to the Interconnection Customer consistent with the final results of this IFS report. The Transmission Owner and Interconnection Customer will have 60 days to negotiate the terms of the GIA consistent with the SPP Open Access Transmission Tariff (OATT).

APPENDICES

A: TRANSMISSION OWNER'S INTERCONNECTION FACILITIES STUDY REPORT AND NETWORK UPGRADES REPORT(S)

See next page for the Transmission Owner's Interconnection Facilities Study Report and Network Upgrades Report(s).

Generation Interconnection Facilities Study Report

GEN-2021-017 37.5 MW Wind Generation

Interconnection

In Cloud County, Kansas.

Revised Nov. 11, 2025

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1.0 Overview

ITC Great Plains ("ITCGP") has performed a facility study at the request of Southwest Power Pool ("SPP") for Generation Interconnection request GEN-2021-017 and UID 170650 under the SPP Open Access Transmission Tariff. The subject request entails interconnecting 37.5MW Wind powered generation facilities in Cloud County, Kansas. The project will interconnect at Elm Creek Substation. It is scheduled for completion by December 31, 2028. This date will be revised further into the process.

The ITCGP scope of this Facility Study is to provide a cost estimate for the Customer's interconnection facilities. This study does not directly address any of the Network Upgrades that may be identified in the DISIS 2021-001, the facilities that are being constructed by the interconnection customer, or any potential sub-transmission facilities (if any) that may be required.

1.1 Facility Study Summary

ITCGP estimates the total project cost of the customer's interconnection facilities will be **$0**(+/ - 20 % accuracy) including applicable company overheads in 2025 dollars. It includes **: $50,000**

for Network Upgrades and **$0** for Transmission Owner Interconnection Facilities. It is further estimated that the required legal/real estate acquisition and construction activities will require approximately 36 months after the GIA is executed. The attached report contains additional details regarding the estimate as well as results of short circuit studies, review of reactive compensation, and information on Interconnection & Operating requirements. If a commercial operation date is required in a timeframe sooner than 36 months, ITCGP highly recommends that the customer and ITCGP enter into an E&P agreement as soon as possible to allow for the long lead time materials to be procured.

ITCGP intends to self-fund the network upgrades for this project and will require a Facility Service Agreement to be negotiated in parallel with the GIA for this project.

The GEN-2021-017 interconnection facilities will require Network Upgrades on the ITCGP system to connect the new generation. Network Upgrades consist of the following:

- Relay System Adjustment

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The Interconnection Customer is responsible for constructing all sole-use facilities such as the Wind farm collector station and the radial 345kV line from the collector station to the ITCGP Elm Creek substation. While this report does define Interconnection Customer owned Interconnection Facilities in enough detail to explain basic requirements, it does not define or contain all of the detailed requirements. Additional metering, communications, and operational requirements may be identified as the Interconnection and Operating Agreements are developed and further communications between the Transmission Owner and Interconnection Customer take place. The Interconnection Customer's low voltage system is not defined in this report.

2.0 Voltage Guidelines:

Reactive power, voltage regulation and operating requirements will be as per Transmission Operator (TOP) and Transmission Provider directives. Interconnection Customer will operate the Generating Facility to a voltage schedule of 350 kV (1.014 pu) with a bandwidth of +/- 6 kV (0.017 pu) at the Point of Interconnection (POI) utilizing the Generating Facility's required power factor design capability as indicated in SPP DISIS 2021-001. As per SPP DISIS 2021-001, the Interconnection Customer's required power factor capability is 0.95 lagging to 0.95 leading (at the POI).

For further clarification, the Interconnection Customer may meet the +/- 0.95 power factor requirement by utilizing reactive capability from external reactive compensation. Note that any reactive compensation installed by the Interconnection Customer shall not cause voltage distortion in accordance with Article 9.7.6 Power Quality of the Generation Interconnection Agreement.

The Interconnection Customer will regulate the Generating Facility's voltage to the specified voltage set point within the defined bandwidth stated above using an automatic voltage controller, and if applicable external reactive compensation.

The above voltage schedule is subject to change. If the need for a change is identified, it will be done within the limits of the GIA provisions stated in Section 9.6 and the Generating Facility's power factor design criteria as stated above. If a schedule change is needed, appropriate written documentation of the change will be provided to the Interconnection Customer.

The Interconnection Customer is required to have a generator operator available for 24/7 communication with the TOP. The TOP may, at any time request a variance from the schedule in response to system operating/security requirements.

3.0 Network Upgrades

3.1 New GEN-2021-017 interconnection at Elm Creek substation

3.1.1 Project Location:

Elm Creek Substation

3.1.2 Project Overview:

The purpose of this project is to provide a transmission system interconnection for the GEN-2021-017 Wind Farm using the same POI as GEN-2017-119

, including UID 170650

3.1.3 Design Criteria:

The Transmission Owner's standards will be applicable. Where no applicable standards are available, the Transmission Owner will substitute industry standards and other good utility practices.

3.1.4 One-Line Diagrams:

See Figure 1 for Transmission Owner One-Line.

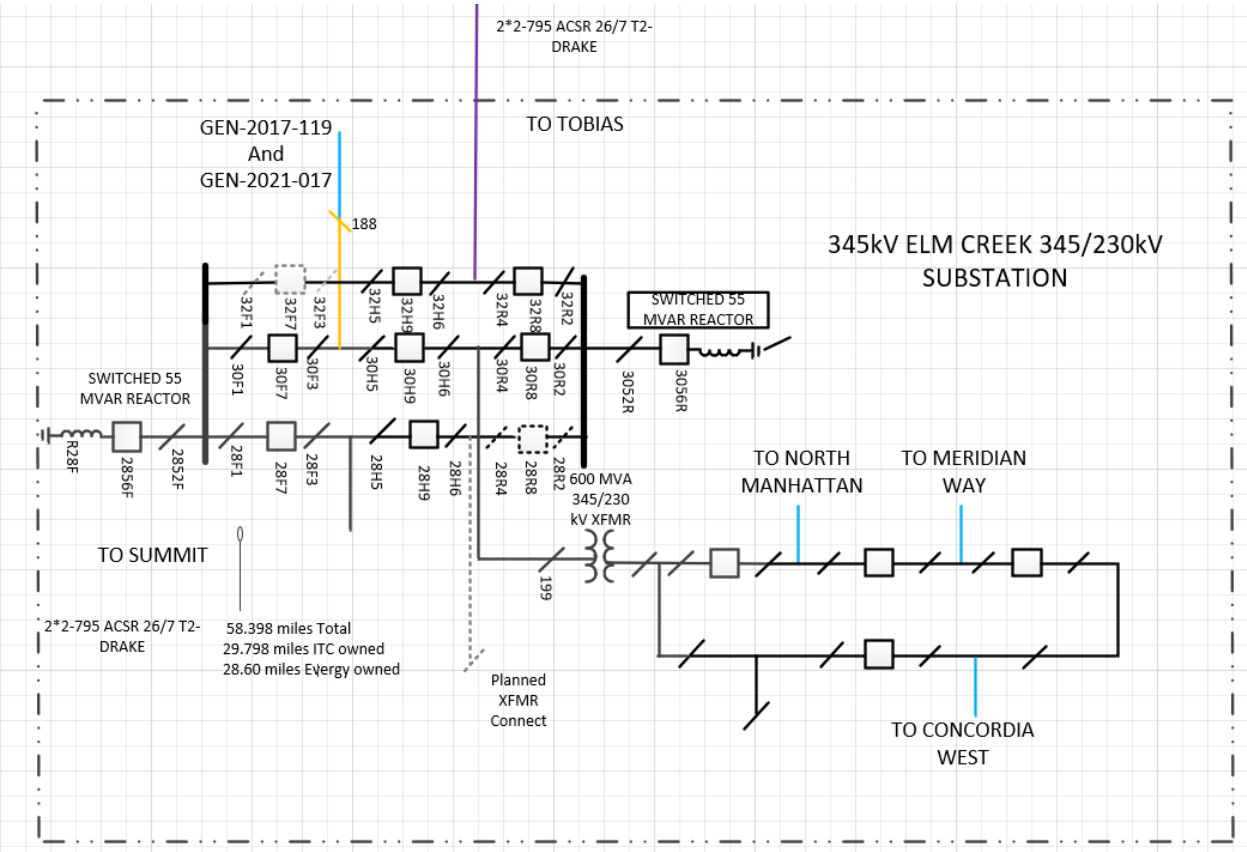

Figure 1 GEN-2021-017 Interconnection Substation One Line

3.1.5 Route Information: N/A

3.1.6 Right-of-Way Information:

It is assumed that the interconnection customer will be responsible for building the 345 kV line required to connect the ITCGP Switching Station at the POI with the customer's substation. As such, the interconnection costs contained herein do not include any costs for extending the ITCGP transmission line. Please see section 6 for general guidelines.

3.1.7 Permitting:

The Interconnection Customer will be responsible for satisfying all community or governmental site plan or zoning approval requirements which may include wetland or flood plain permits. The Transmission Owner will be responsible for the control center building permit and the KDHE storm water construction permits associated with the Transmission Owner portions of the construction.

3.1.8 Metering & Ownership Demarcation:

Covered in section 4.1.9

3.1.9 Protection & Control Overview:

One set of 345kV CCVTs will be installed.

One 345kV breaker control panels with microprocessor-based relays will be installed. Breaker failure protection, automatic reclosing supervised by synchronism check will be provided.

One 345kV line relaying panels with microprocessor-based relays will be installed.

3.1.10 Insulation Coordination:

345kV, 1050kV BIL

3.1.11 Short Circuit Study Results - Bus Fault Levels:

ITCGP calculated bus fault levels for the interconnection substation and adjacent substations to determine if the added generation will cause fault currents to exceed interrupting ratings for existing equipment and for use in sizing future equipment. Calculations are based on data for the interconnection transformer and installed Wind supplied by the Interconnection Customer. Variance from supplied data could materially change calculated short circuit values. Results are displayed in Table 1.

Table 1 – Short Circuit Results

Fault Location	Maximum Fault Current (Amps)	
	Phase	Ground
Elm Creek 345 kV Bus	15300	12082
GEN-2021-017 345 kV Bus	6098	500

Fault currents shown in Table 1 are within the circuit breaker interrupting capabilities with the addition of 113 MW Wind contributed by GEN-2021-076.

3.1.12 Reactive Compensation:

ITCGP evaluated the impact of the proposed interconnection on the reactive compensation equipment presently planned or in service at the Elm Creek Substation facilities. ITCGP studies concluded that no additional reactive compensation is required for interconnection of GEN-2021-017 at this time. ITCGP may review the need for reactive compensation at a future time during which the size of a reactor would be further refined with additional studies after the GIA is signed.

3.1.13 Other Equipment & Materials:

NA

3.1.14 Relaying, Control, & SCADA:

Panel Requirements

- Relay adjustments

3.1.15 Grounding System:

The grounding system will be designed and installed per Transmission Owner's standards. These standards follow the IEEE 80 standards.

3.1.16 Lightning Shielding Design:

Lightning shielding will be provided per Transmission Owner's standards. Multiple H-frame structures along with shield wires will be used for lightning protection.

3.1.17 Yard Lighting:

Yard lighting will be installed to be sufficient for visual indication of the disconnect switch positions or egress of personnel and will not serve as task lighting.

3.1.18 Structures:

The required new outdoor steel structures listed below will be hot-dipped galvanized wide flange structures or tubular steel:

NA

3.1.19 Foundations:

Foundations and slabs will be designed and installed in accordance with the owner's standards and specifications. The minimum design depth to firm bearing is contingent upon soil borings at the site.

3.1.21 Scheduling Requirements:

Legal/Real Estate Procurement 9 weeks

Standard Material Procurement / Design 52 weeks

Long Lead Breakers and Disconnects 36 months

Substation Construction 32 weeks

Closeout Activities 4 weeks

3.1.20 Site Work:

NA

3.1.21 Total Cost:$ **0**

Total Cost Estimate Accuracy: +/- 20%

Note that the cost estimate provided is expressed in 2025 terms and includes applicable company overheads.

4.0 Transmission Owner Interconnection Facilities

4.1 GEN-2021-017 – Interconnection Facilities

4.1.1 Project Location:

Elm Creek Substation

4.1.2 Project Overview:

No new line entrance structure will be added at the GEN-2021-017 interconnection to Elm Creek for termination of the line from the collector substation. It will Share the POI with GEN-2019-017

4.1.3 Design Criteria:

The Transmission Owner's standards will be applicable. Where no applicable standards are available, the Transmission Owner will substitute industry standards and other good utility practices.

4.1.4 One-Line Diagrams: See Figure 1

4.1.5 Site Plan:

Figure 2 – Site Plan

4.1.6 Route Information: N/A

4.1.7 Right-of-Way Information: N/A

4.1.8 Permitting: Same as that covering section 3.1.8

4.1.9 Metering & Ownership Demarcation:

The Interconnection Customer or others will provide, own, operate and maintain revenue metering. The specifics of the revenue metering will be defined during the detailed engineering phase of the project. The customer must cooperate with the Transmission Provider and Local Transmission Owner requirements in the metering design. Revenue metering equipment will be required at the customer's project substation with loss compensation to the Point of Interchange in the Transmission Owner's substation.

The ownership demarcation will be at first substation steel H-frame within the security fence of the Transmission Owner substation.

The Interconnection Customer will be required to provide enough conductor to terminate on the H-frame and extend down to reach grade level.

4.1.10 Protection & Control Overview:

Possible relay adjustments for increased generation

4.1.11 Insulation Coordination:

345kV, 1050kV BIL

4.1.12 Short Circuit Study Results - Bus Fault Levels: See Section 3a above

4.1.13 Other Equipment & Materials:

- NA

4.1.14 Relaying, Control, & SCADA:

Panel Requirements: One RD3048 Panel – Fiber optic current differential (SEL 311L Relays)

4.1.15 Grounding System:

The grounding system will be designed and installed per Transmission Owner's standards. These standards follow the IEEE 80 standards.

4.1.16 Lightning Shielding Design:

The attachment of the OPGW shield wire from the developer's line to the H-frame will provide lightning protection for the Interconnection Facility equipment at GEN-2021-017 interconnection substation.

4.1.17 Yard Lighting:

NA

4.1.18 Structures:

The required new outdoor steel structures listed below will be hot-dipped galvanized wide flange structures or tubular steel:

NA

4.1.19 Foundations:

Foundations will be designed and installed in accordance with the owner's standards and specifications. The minimum design depth to firm bearing is contingent upon soil borings at the site.

4.1.20 Conductors, Shield Wires, & OPGW: N/A

4.1.21 Insulators: N/A

4.1.22 Removal of Existing Facilities: N/A

4.1.23 Site Work: N/A

4.1.24 Total Cost: **$50,000**

Total Cost Estimate Accuracy: +/- 20%

Total Project cost (Network Upgrades and Interconnection facilities): $50,000

Note that the cost estimate provided is expressed in 2025 terms and includes applicable company overheads and potential tax gross ups.

5.0 Interconnection Customer Interconnection Facilities

5.1 GEN-2021-017 Interconnection facilities

All facilities within the Interconnection Customer's collector substation and between the Interconnection Customer's substation and ITCGP's new GEN-2021-017 interconnection substation are not included in this report and are the sole responsibility of the Interconnection Customer. Some of the key facilities are briefly mentioned below. The Point of Interconnection (POI) and the Point of Change of Ownership (PCO) are shown in Figure 1.

The Interconnection Customer shall use existing 345 kV radial line from the Wind farm collector station to ITCGP's Elm Creek substation.

The customer's step-up transformer between the Wind farm's 34.5 kV collector network and the 345 kV facilities will require a high side breaker capable of interrupting a transformer high side winding fault.

All Interconnection Customer owned 345 kV apparatus as well as the revenue metering equipment located in the Interconnection Customer's substation shall comply with ITCGP standards and will be subject to ITCGP approval. ITCGP will provide the Interconnection Customer with standards during detailed design or upon request. The Interconnection Customer is solely responsible for the SCADA and telecommunications facilities necessary to operate and monitor its facility.

Necessary trip and close signal interlocks will be provided by ITCGP to the Interconnection Customer's generation facility for the safe operation of the system. Interconnection Customer will provide breaker status and current transformer signals to ITCGP for system operation and protection.

Total Project Cost: N/A

Total Cost Estimate Accuracy: N/A

6.0 Right of Way Requirements

The Interconnection Customer shall obtain easements from the Transmission Owner to work in or drive through the Transmission Owner's transmission line right-of-way. The Transmission Owner and Interconnection Customer will also cooperatively negotiate any easements required for the Interconnection Customer's transmission lines and structures. The Transmission Owner agrees to not unreasonably withhold easements.

For the Network Upgrades and any Transmission Owner Interconnection facilities identified in this report, the Transmission Owner agrees to obtain all necessary easements/right-of-way as required to construct those facilities that will be owned and operated by ITCGP.

Interconnection Facilities Study

Costs associated with DISIS-2021-001 Build a new 50 MVAR cap bank at Viola 138kV August 2025

Introduction

This report summarizes the scope of the Interconnection Facilities Analysis for Network Upgrade(s) to determine costs related to the addition of the SPP-GI DISIS-2021-001 Interconnection Request(s). Evergy, as a TO, is receiving an unprecedented amount of GI interconnect requests. The cost estimates and interconnect information supplied are based on current system configuration. There are many cases of multiple GI's requesting POIs at the same substation. Ongoing changes in Evergy's transmission system configuration could affect the required system upgrades and costs necessary to meet any particular GI interconnect request in the future.

Southwest Power Pool Generation Interconnection Request:

Per the SPP Generator Interconnection Procedures (GIP), SPP has requested that Evergy perform an Interconnection Facilities Study (IFS) for Network Upgrade(s) in accordance with the Scope of Interconnection Facilities Study GIP Section 8.10 and the Interconnection Facilities Study Procedures in accordance with GIP Section 8.11 for the following Interconnection Request(s):

Upgrade Type	UID	Upgrade Name	DISIS Cost Estimate	DISIS Lead Time
Current Study	170643	Build a new 50 MVAR cap bank at Viola 138kV	$ 1,270,333.00	48 Months

Build a new 50 MVAR cap bank at Viola 138kV

138kV Substation

Network Upgrades to add a new 50 MVAR cap bank at Viola 138kV. This upgrade includes installation of a new 50 MVAR capacitor bank on the 138kV bus at Viola. UID 170643

Total Cost

The total cost estimate for this Network Upgrade is:

$	0	Transmission Line
$	1,161,332	Substation
$	3,800	AFUDC
$	105,201	Contingency
$	1,270,333	Total

This estimate is accurate to +/- twenty (20) percent, based on current prices, in accordance with Attachment A of Appendix 4 of the Interconnection Facilities Study Agreement. However, recent cost fluctuations in materials are very significant and the accuracy of this estimate at the time of actual settings cannot be assured.

Time Estimate

Time estimates are based on current version of the project schedule and some processes of each category run concurrently.

Engineering Time	12-18	Months
Procurement Time	48	Months
Construction Time	48	Months
Total Project Length	48	Months

Figure 1 –Viola 138kV substation

Interconnection Facilities Study

Costs associated with DISIS-2021-001 N Manhattan-Elm Creek 230kV Ckt 1 Terminal Upgrade to a minimum of 439 MVA

August 2025

Introduction

This report summarizes the scope of the Interconnection Facilities Analysis for Network Upgrade(s) to determine costs related to the addition of the SPP-GI DISIS-2021-001 Interconnection Request(s). Evergy, as a TO, is receiving an unprecedented amount of GI interconnect requests. The cost estimates and interconnect information supplied are based on current system configuration. There are many cases of multiple GI's requesting POIs at the same substation. Ongoing changes in Evergy's transmission system configuration could affect the required system upgrades and costs necessary to meet any particular GI interconnect request in the future.

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Upgrade Type	UID	Upgrade Name	DISIS Cost Estimate	DISIS Lead Time
Current Study	170645	N Manhattan-Elm Creek 230kV Ckt 1 Terminal Upgrade to a minimum of 439 MVA	$ 7,096,853.00	48 Months

N Manhattan-Elm Creek 230kV Ckt 1 Terminal Upgrade to a minimum of 439 MVA

230kV Line

Network Upgrades to upgrade the N Manhattan-Elm Creek 230kV Ckt 1 Terminal Upgrade to a minimum of 439 MVA. This upgrade includes a line rebuild of 2.9 miles from the MKEC POI to Evergy's North Manhattan 230kV substation. Rebuild section starts at structure 88 and ends at str 108, which is the change of ownership with MKEC. Estimate assumes the line will be rebuilt to the standard 3000A rating for 230kV. UID 170645

Total Cost

The total cost estimate for this Network Upgrade is:

$	7,075,626	Transmission Line
$	0	Substation
$	21,227	AFUDC
$	0	Contingency
$	7,096,853	Total

This estimate is accurate to +/- twenty (20) percent, based on current prices, in accordance with Attachment A of Appendix 4 of the Interconnection Facilities Study Agreement. However, recent cost fluctuations in materials are very significant and the accuracy of this estimate at the time of actual settings cannot be assured.

Time Estimate

Time estimates are based on current version of the project schedule and some processes of each category run concurrently.

Engineering Time	12-18	Months
Procurement Time	48	Months
Construction Time	48	Months
Total Project Length	48	Months

Figure 1 – MKEC POI-North Manhattan 230kV line rebuild