FACILITY STUDY

for

Generation Interconnect Request GEN-2022-016

288MW Solar
Woodward County
Oklahoma

November 5th, 2025

Benjamin Sasu
Senior Engineer
Transmission Planning
OG&E Electric Services

Summary

Pursuant to the tariff and at the request of the Southwest Power Pool (SPP), Oklahoma Gas and Electric (OG&E) performed the following Facility Study to satisfy the Facility Study Agreement executed by the requesting customer for SPP Generation Interconnection request GEN-2022-016. The request for interconnection was placed with SPP in accordance with SPP's Open Access Transmission Tariff, which covers new generation interconnections on SPP's transmission system. GEN-2022-016 shares a gen tie with GEN-2022-012 and GEN-2022-017. The requirements for interconnection consist of installing a new terminal, breaker, and associated equipment at Woodward EHV Substation. These requirements are to be established by GEN-2022-016.

The total cost for OKGE to install a new terminal, breaker, and associated equipment at Woodward EHV Substation is estimated at **$1,786,604.25.** This cost is the amount assigned to GEN-2022-016 for the shared TOIF/network upgrades this tie line shares with GEN-2022-017 and GEN-2022-012. If any of these Interconnection Requests are withdrawn, the cost assigned to GEN-2022-016 will be revised accordingly.

Table of Contents

Introduction

The Southwest Power Pool has requested a Facility Study for the purpose of interconnecting a Solar generating facility within the service territory of OG&E Electric Services (OKGE) in Woodward County, Oklahoma. The proposed 345kV point of interconnection is at Woodward EHV Substation in Woodward County. This substation is owned by OKGE. The cost for adding a new 345kV terminal at Woodward EHV Substation, the required interconnection facility for GEN-2022-016, is estimated at **$1,786,604.25.**

Network Constraints in the Southwest Public Service (SPS), OKGE and Western Farmers Electric Cooperative (WFEC) systems may be verified with a transmission service request and associated studies.

Other Network Constraints in the American Electric Power West (AEPW), Southwest Public Service (SPS), OKGE, and Western Farmers Electric Cooperative (WFEC) systems may be verified with a transmission service request and associated studies.

Interconnection Facilities

The primary objective of this study is to identify attachment facilities. The requirements for interconnection consist of adding a new 345kV terminal at Woodward EHV Substation. The 345kV terminal installation shall be constructed and maintained by OKGE. It is assumed that obtaining all necessary right-of-way for the line into the existing OKGE 345kV substation facility will be performed by the interconnection customer.

The total cost for OKGE to add a new 345kV terminal at Woodward EHV substation, is estimated at **$1,786,604.25**. This cost does not include the building of the 345kV line from the Customer substation into Woodward EHV Substation. The Customer is responsible for this 345kV line up to the point of interconnection. This does not include the Customer's 345-34.5kV substation and the cost estimate should be determined by the Customer.

This Facility Study does not guarantee the availability of transmission service necessary to deliver the additional generation to any specific point inside or outside the Southwest Power Pool (SPP) transmission system. The transmission network facilities may not be adequate to deliver the additional generation output to the transmission system. If the customer requests firm transmission service under the SPP Open Access Transmission Tariff at a future date, Network Upgrades or other new construction may be required to provide the service requested under the SPP OATT.

The costs of interconnecting the facility to the OKGE transmission system are listed in Table 1.

Short Circuit Fault Duty Evaluation

It is standard practice for OG&E to recommend replacing a circuit breaker when the current through the breaker for a fault exceeds 100% of its interrupting rating with re-closer de-rating applied, as determined by the ANSI/IEEE C37.5-1979, C37.010-1979 & C37.04-1979 breaker rating methods.

For this generator interconnection, no breakers were found to exceed their interrupting capability after the addition of the Customer's 288 MW generation and related facilities. OG&E found no breakers that exceeded their interrupting capabilities on their system. Therefore, there is no short circuit upgrade costs associated with the GEN-2022-016 interconnection.

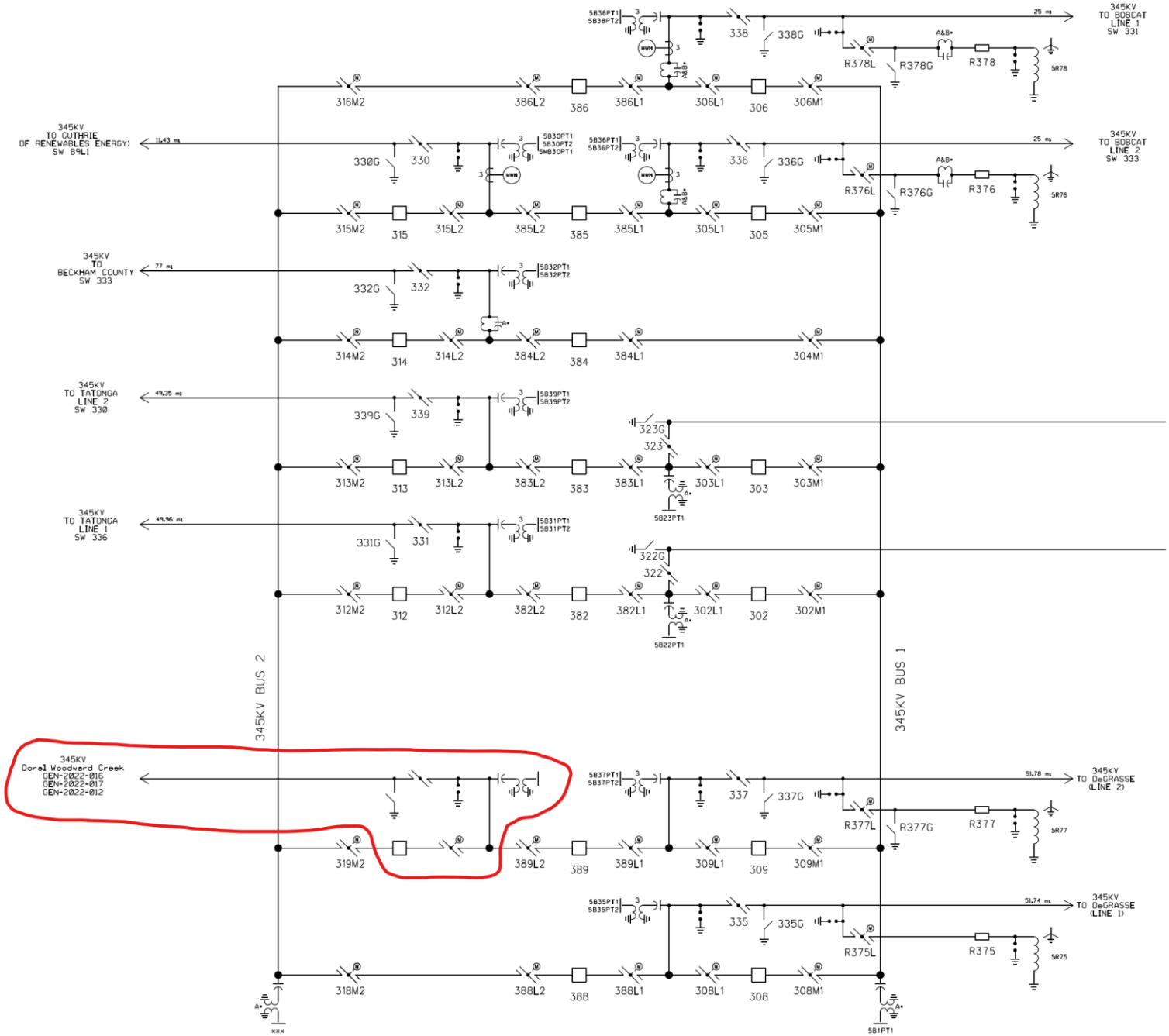
Table 1: Required Interconnection Network Upgrade Facilities

Facility	ESTIMATED COST (2025 DOLLARS)
Lead time	36 months
OKGE – **Interconnection Facilities**- Install 345kV terminal at Woodward EHV Substation	$636,662
OKGE – **Network Upgrades** – Add a 345kV Breaker, 345kV Switches, Metering consisting of CTs and PTs	$1,149,942.25
OKGE – Land or ROW	No Additional ROW
Total	**$1,786,604.25**

Prepared by Benjamin Sasu — November 5th, 2025
Senior Engineer, Transmission Planning
OG&E Electric Services

Reviewed by:
Adam Snapp, P.E.
Senior Manager, Transmission Planning — November 5th, 2025

Woodward EHV Substation



FACILITY STUDY

for

DISIS-2022-001 Network Upgrade Request UID: 170698

Line Rebuild between WOODWRD4 TO WINDFARM4 138Kv Line 1
Harper County
Oklahoma

November 5th, 2025

Benjamin Sasu.
Senior Transmission Planning Engineer
OG&E Electric Services

Summary

Pursuant to the tariff and at the request of the Southwest Power Pool (SPP), Oklahoma Gas and Electric (OG&E) performed the following Facility Study to satisfy the Facility Study Agreement executed by the requesting customer for SPP DISIS-2022-001 UID 170698. The request for interconnection was placed with SPP in accordance with SPP's Open Access Transmission Tariff. The requirement for network upgrades and rebuilding line between Woodward District to Windfarm Switching Station to a minimum of 478MVA to be established by UID 170698. The total cost for OKGE to complete the necessary work is estimated at **$18,105,000**

Table of Contents

Introduction

The Southwest Power Pool has requested a Facility Study for the purpose of rebuilding the 138kV line transmission line between Woodward District to Windfarm Switching Station Substations within the service territory of OKGE Electric services (OKGE) in Harper County Oklahoma. The cost for network upgrades and rebuilding the line, and associated equipment's at WOODWRD4 Substation and WINDFARM4 Substation is estimated at **$18,105,000.**

Network Constraints in the Southwest Public Service (SPS), OKGE and Western Farmers Electric Cooperative (WFEC) systems may be verified with a transmission service request and associated studies.

Other Network Constraints in the American Electric Power West (AEPW), Southwest Public Service (SPS), OKGE and Western Farmers Electric Cooperative (WFEC) systems may be verified with a transmission service request and associated studies.

Interconnection Facilities

The primary objective of this study is to identify attachment facilities. The requirements for rebuilding the 138kV line consists of replacing existing transmission poles and installing 12 miles of transmission conductor. This 138kV rebuild shall be constructed and maintained by OKGE..

The total cost for OKGE to complete the work is estimated at **$18,105,000.**

This Facility Study does not guarantee the availability of transmission service necessary to deliver the additional generation to any specific point inside or outside the Southwest Power Pool (SPP) transmission system. The transmission network facilities may not be adequate to deliver the additional generation output to the transmission system. If the customer requests firm transmission service under the SPP Open Access Transmission Tariff at a future date, Network Upgrades or other new construction may be required to provide the service requested under the SPP OATT.

The cost of network upgrades and rebuilding the 12 miles, 138kV line of the OKGE transmission system is listed in Table 1.

Short Circuit Fault Duty Evaluation

It is standard practice for OG&E to recommend replacing a circuit breaker when the current through the breaker for a fault exceeds 100% of its interrupting rating with re-closer de-rating applied, as determined by the ANSI/IEEE C37.5-1979, C37.010-1979 & C37.04-1979 breaker rating methods.

For this line rebuild, no breakers were found to exceed their interrupting capability after the addition of the new equipment. OG&E found no breakers that exceeded their interrupting capabilities on their system. Therefore, there is no short circuit upgrade costs associated with UID 170698 interconnection

Table 1: Required Interconnection Network Upgrade Facilities

Facility	ESTIMATED COST (2025 DOLLARS)
Lead Time	36 months
OKGE – **Interconnection Facilities-**	$0
OKGE – **Network Upgrades-** Rebuild 13.7 miles of 138kV transmission line from Cottonwood Creek to Crescent Substation	**$18,105,000**
OKGE - Right-of-Way for 138kV terminal addition	No Additional ROW
Total	**$18,105,000**

Prepared by:
Benjamin Sasu.
Senior Transmission Planning Engineer
sasube@oge.com

November 5th, 2025

Reviewed by:
Adam Snapp, P.E.
Senior Manager- Transmission Planning
snappad@oge.com

November 5th, 2025

Woodward District to Windfarm Switching Station