Site Diagnostic Report

Example 2GW Site

2000 MW Target Capacity | 3 Phases

Utility: PSO | Assessment Date: Nov 2025

Executive Summary

This diagnostic analyzes the critical path to power for Example 2GW Site, a 2000MW development in OK served by PSO. The project is planned across 3 phases, with power delivery through a combination of utility grid and onsite generation.

Power Phasing Summary

Phase	Interconnect	Generation	Voltage	Target	Study Status
1	120 MW	120 MW	115kV	Jan 2029	SIS In Progress
2	500 MW	500 MW	230kV	Jun 2030	Studies Not Started
3	1000 MW	1000 MW	345kV	Jan 2032	Studies Not Started

Phase 1: Initial Power

Interconnection: 120 MW @ 115kV (radial) | **Generation:** 120 MW | **Target:** Jan 2029

Infrastructure: 5 mi new transmission | **Studies:** SIS In Progress

Phase 2: Expansion

Interconnection: 500 MW @ 230kV (switching_station) | **Generation:** 500 MW | **Target:** Jun 2030

Infrastructure: 8 mi new transmission | New substation | **Studies:** Studies Not Started

Phase 3: 1GW+ Buildout

Interconnection: 1000 MW @ 345kV (switching_station) | **Generation:** 1000 MW | **Target:** Jan 2032

Infrastructure: 35 mi new transmission | New substation | **Studies:** Studies Not Started

Capacity Trajectory (2025-2035)

Year-by-year breakdown of interconnection capacity vs. generation capacity. The **Available** column shows the limiting factor between the two.

Year	Interconnect	Generation	Available	IT Load	Limiting Factor
2028	0 MW	100 MW	**0 MW**	0 MW	interconnection
2029	120 MW	420 MW	**120 MW**	92 MW	interconnection
2030	620 MW	920 MW	**620 MW**	476 MW	interconnection
2031	620 MW	920 MW	**620 MW**	476 MW	interconnection
2032	1620 MW	1920 MW	**1620 MW**	1246 MW	interconnection
2033	1620 MW	1920 MW	**1620 MW**	1246 MW	interconnection
2034	1620 MW	1920 MW	**1620 MW**	1246 MW	interconnection
2035	1620 MW	1920 MW	**1620 MW**	1246 MW	interconnection

Critical Path to Power

Key tasks and dependencies for each phase. Tasks are sequenced based on standard lead times and interdependencies.

Task	Duration	Status	Dependencies
Gas Generation Permitting (200MW)	12 mo	not started	None
Gas Pipeline (12 mi)	48 mo	not started	GEN1_PERMIT
Gas Generation Construction (200MW)	24 mo	not started	GEN1_PERMIT, GEN1_PIPE
Solar Construction (100MW)	18 mo	not started	None
Phase 1			
Phase 1: System Impact Study	12 mo	in progress	None
Phase 1: Facilities Study	9 mo	not started	P1_SIS
Phase 1: Facilities Agreement	6 mo	not started	P1_FS
Phase 1: Transformer Procurement (115kV)	24 mo	not started	P1_FA
Phase 1: Breaker Procurement	18 mo	not started	P1_FA
Phase 1: Transmission Construction (5 mi)	30 mo	not started	P1_FA
Phase 2			
Phase 2: System Impact Study	12 mo	not started	None
Phase 2: Facilities Study	9 mo	not started	P2_SIS
Phase 2: Facilities Agreement	6 mo	not started	P2_FS
Phase 2: Transformer Procurement (230kV)	30 mo	not started	P2_FA
Phase 2: Breaker Procurement	18 mo	not started	P2_FA
Phase 2: Transmission Construction (8 mi)	48 mo	not started	P2_FA
Phase 2: New Substation	30 mo	not started	P2_FA
Phase 3			
Phase 3: System Impact Study	12 mo	not started	None
Phase 3: Facilities Study	9 mo	not started	P3_SIS
Phase 3: Facilities Agreement	6 mo	not started	P3_FS
Phase 3: Transformer Procurement (345kV)	36 mo	not started	P3_FA
Phase 3: Breaker Procurement	18 mo	not started	P3_FA
Phase 3: Transmission Construction (35 mi)	210 mo	not started	P3_FA
Phase 3: New Substation	30 mo	not started	P3_FA

Identified Bottlenecks

- **interconnection constraint:** Interconnection (0MW) limits available power vs generation (100MW)
- **interconnection constraint:** Interconnection (120MW) limits available power vs generation (420MW)
- **interconnection constraint:** Interconnection (620MW) limits available power vs generation (920MW)
- **interconnection constraint:** Interconnection (620MW) limits available power vs generation (920MW)
- **interconnection constraint:** Interconnection (1620MW) limits available power vs generation (1920MW)
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- **interconnection constraint:** Interconnection (1620MW) limits available power vs generation (1920MW)
- **long lead time:** Phase 1: Transformer Procurement (115kV) requires 24 months
- **long lead time:** Phase 1: Transmission Construction (5 mi) requires 30 months

Risk Assessment

[HIGH] **approval:** Phase 1: Facilities Study not started

[HIGH] **equipment:** Phase 3: 345kV transformer lead time is 36+ months

[MEDIUM] **identified:** 345kV transformer lead time (36+ months)

[MEDIUM] **identified:** Gas pipeline permitting timeline

Recommendations

1. **Evaluate early transformer procurement** (Within 30 days)
   → 24 month lead time - consider at-risk order
2. **Evaluate early transformer procurement** (Within 30 days)
   → 30 month lead time - consider at-risk order
3. **Evaluate early transformer procurement** (Within 30 days)
   → 36 month lead time - consider at-risk order
4. **Initiate System Impact Study for Phase 2** (Immediate)
   → Studies are on critical path - delay cascades to all downstream
5. **Initiate System Impact Study for Phase 3** (Immediate)
   → Studies are on critical path - delay cascades to all downstream
6. **Explore customer-provided breakers** (Within 30 days)
   → Can compress timeline by 6+ months
7. **Confirm study/approval timeline with utility** (Immediate)
   → No Facilities Agreement in place - all power dates at risk
8. **Customer-provided breakers for Phase 1** (Evaluate)
   → Identified acceleration opportunity

Open Questions

1. Confirm total power phasing - shows 1.62GW but states 2GW+ target
2. What is driving the 2029 timeline for first 120MW?
3. Is 345kV being upgraded? Nearest 345kV appears 35 miles away.

4. Clarify if 3.1 MGD is water consumption or WW discharge

Non-Power Items

Zoning: pre-app (12 months expected)
Water Consumption: 3.1 MGD **| Capacity:** 5.0 MGD
Wastewater Discharge: 2.5 MGD **| Capacity:** 3.0 MGD

This diagnostic is based on the Critical Path to Power framework. Actual timelines may vary based on utility responsiveness, equipment availability, and regulatory processes.