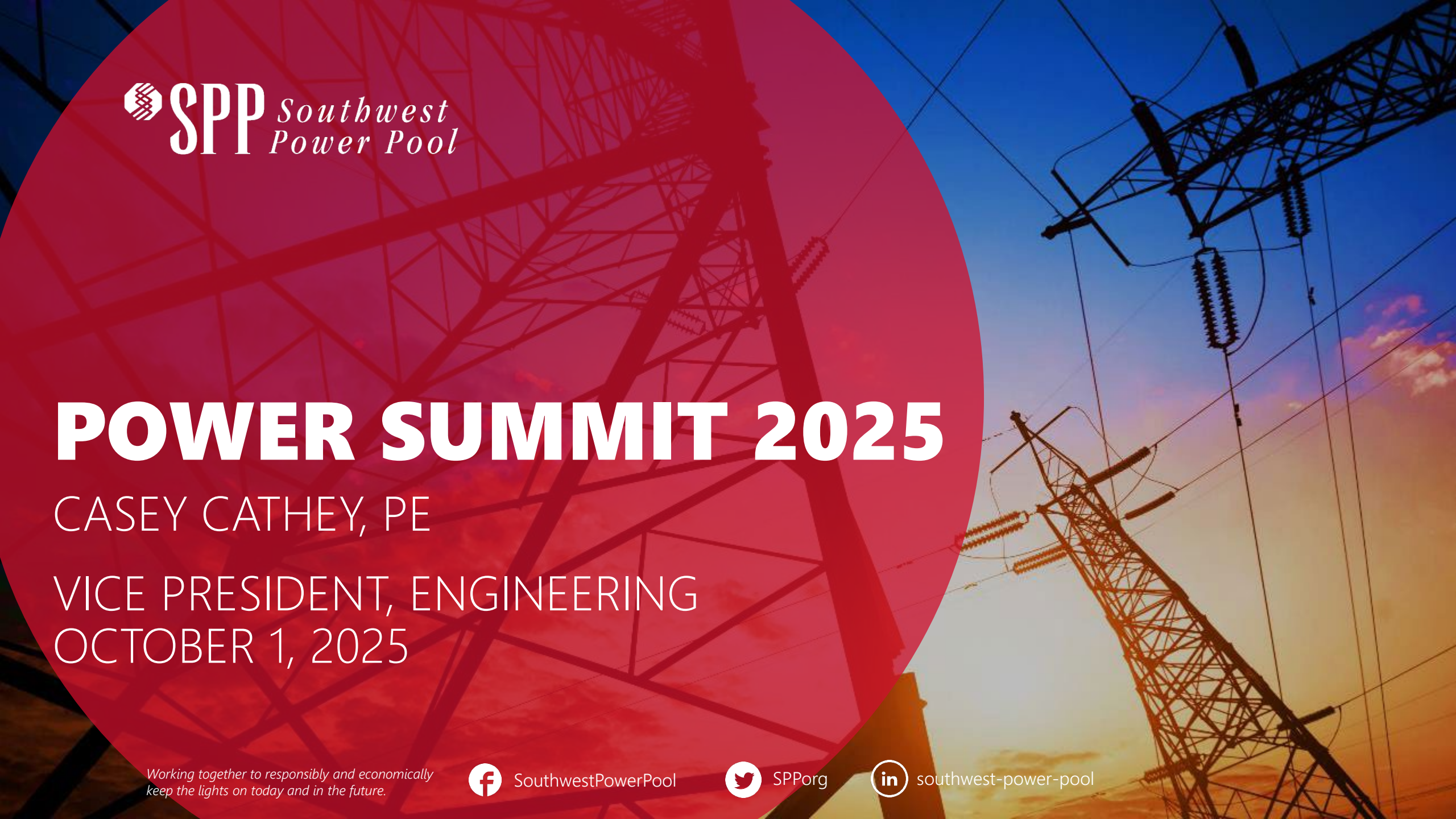


SPP Southwest Power Pool

POWER SUMMIT 2025

CASEY CATHEY, PE

VICE PRESIDENT, ENGINEERING

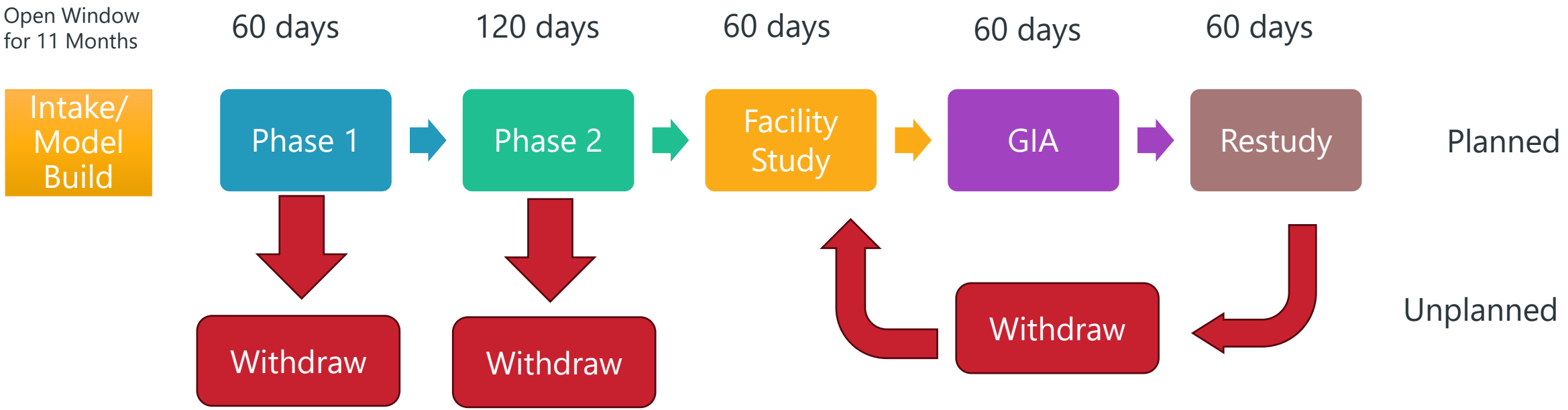
OCTOBER 1, 2025

Working together to responsibly and economically keep the lights on today and in the future.

ACCELERATING GENERATION

DEFINITIVE INTERCONNECTION SYSTEM IMPACT STUDY (DISIS) PROCESS (TODAY)

- **Cluster study where all projects from the yearly window are studied together**
- **Only 20-40% of submitted projects make it through the entire process**
- **Low Cost Certainty since lot of projects can withdraw at any time causing upgrades to change or no longer be needed.**
- **Additional Restudies required for late stage withdraws**



*For example purpose only. Actual implementation still in discussion

APPLICATION REQUIREMENTS

General Project information (Contact, Location, Size, etc)

Technical Specification of Projects

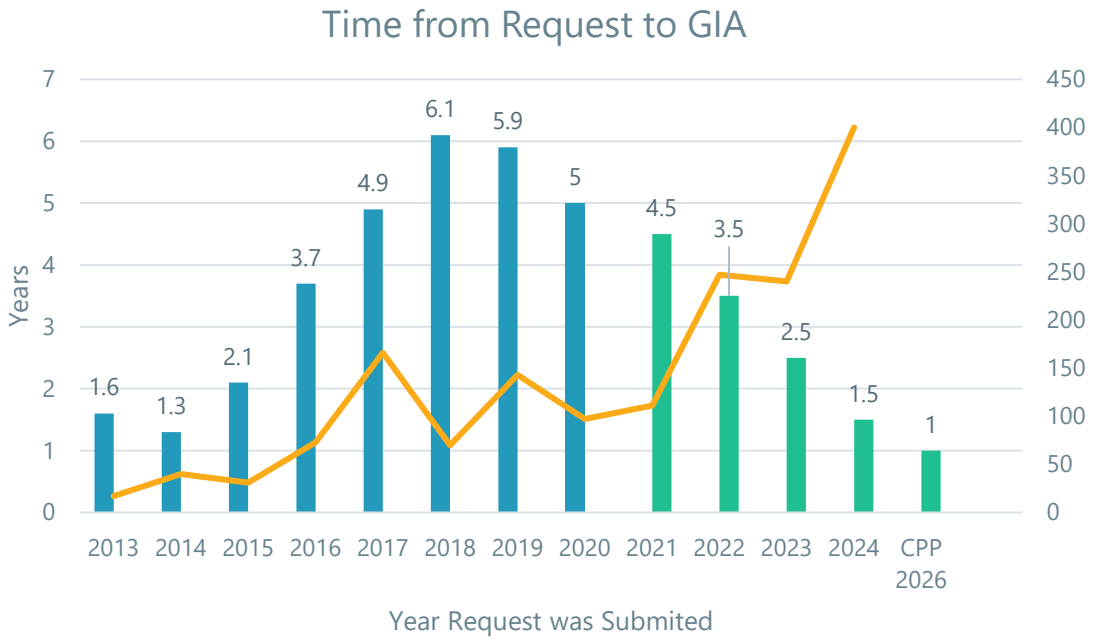
Study Deposit

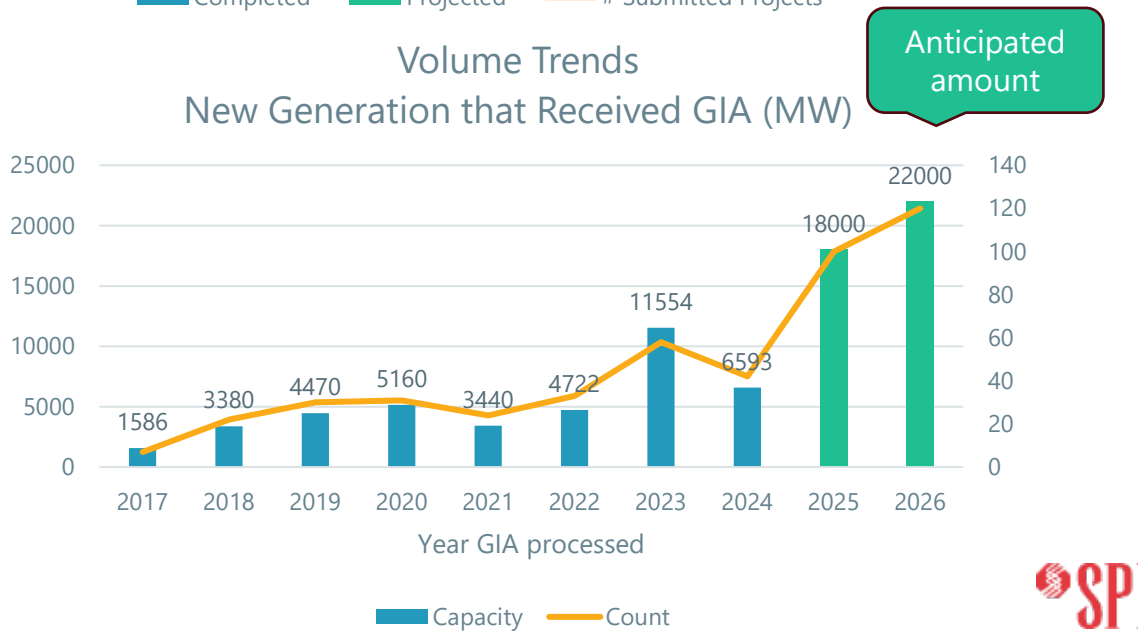
Cash, Letter of Credit, or Surety Bond Securities

Site Control

GENERATION INTERCONNECTION AGREEMENTS (GIA)

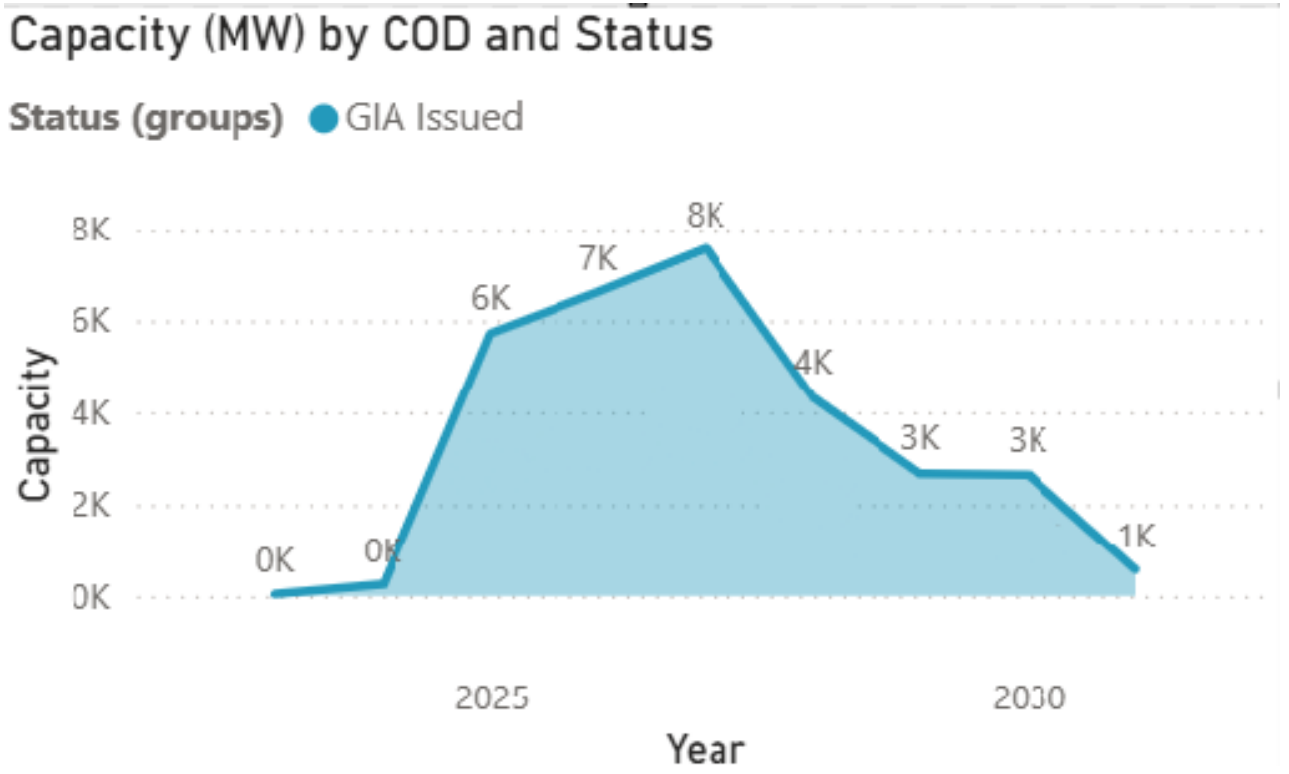
- New policies, processes & and automation improvements to the DISIS study allow SPP to deliver GIAs within 1.5 year from submission time.
- Processing record levels of GIA as it clears the backlog of projects and able to process more requests per study.



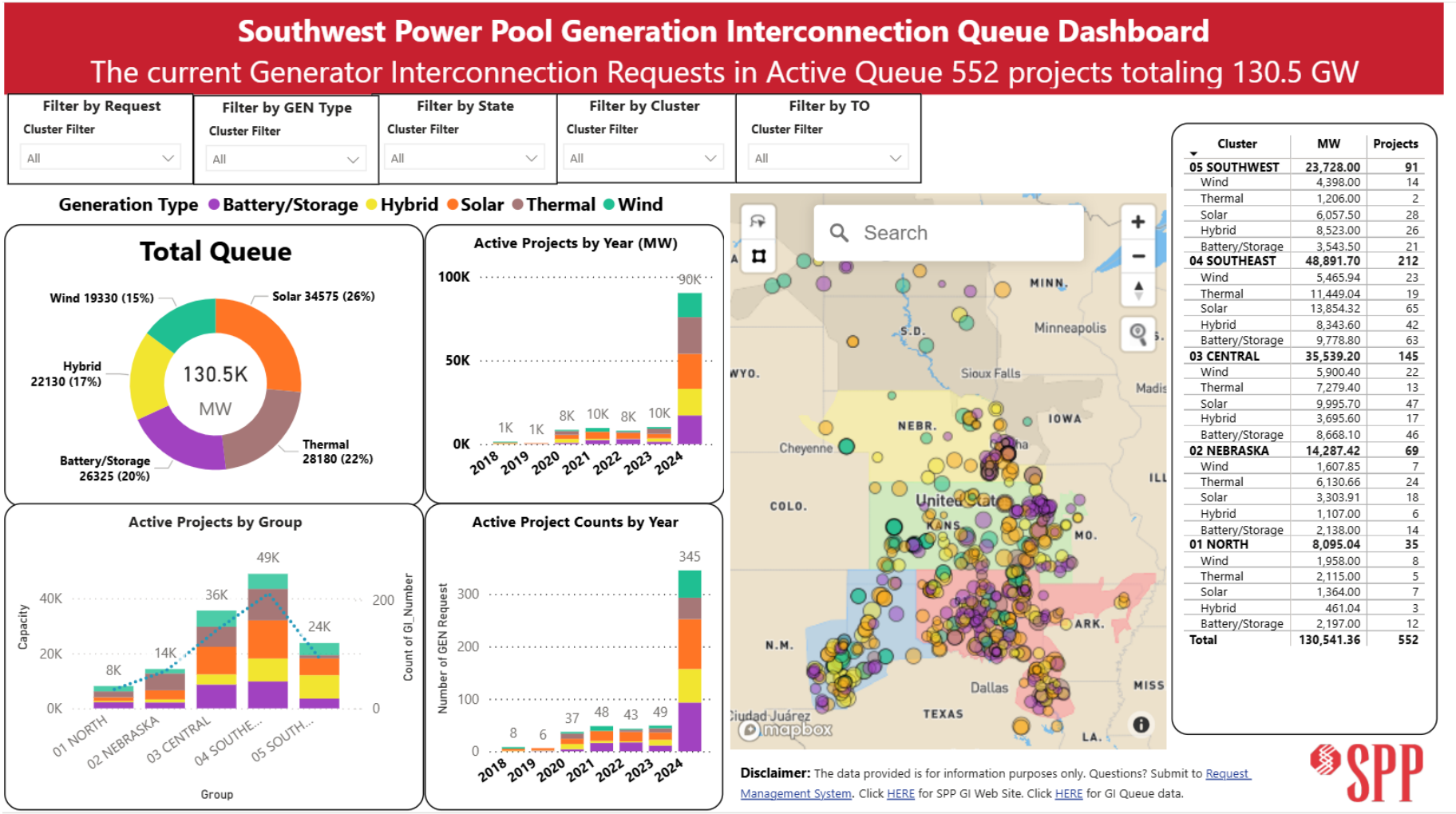


GENERATION INTERCONNECTION

- Over 30 GW of signed Capacity expected to come online by 2030
- Expected to add almost 6GW+ per year for the next 3 years
- That amount will continue to grow as more requests sign their Generation Interconnection agreements (GIA)



GI DASHBOARD



INTEGRATED TRANSMISSION PLAN (ITP)

WHAT IS THE ITP?

The **Integrated Transmission Planning** (**ITP**) assessment is a regional planning process built to leverage knowledge of the transmission system's reliability, public policy, operational, and economic needs, as well as compliance, generator interconnection, and transmission service request impacts to **develop a cost-effective transmission portfolio over a 10-year planning horizon**.

WHERE WE ARE GOING?

56GW

SPP Peak Load as of Today

75GW

Latest 2026 ITP **BR Forecast** (2035, Y10)

110 GW

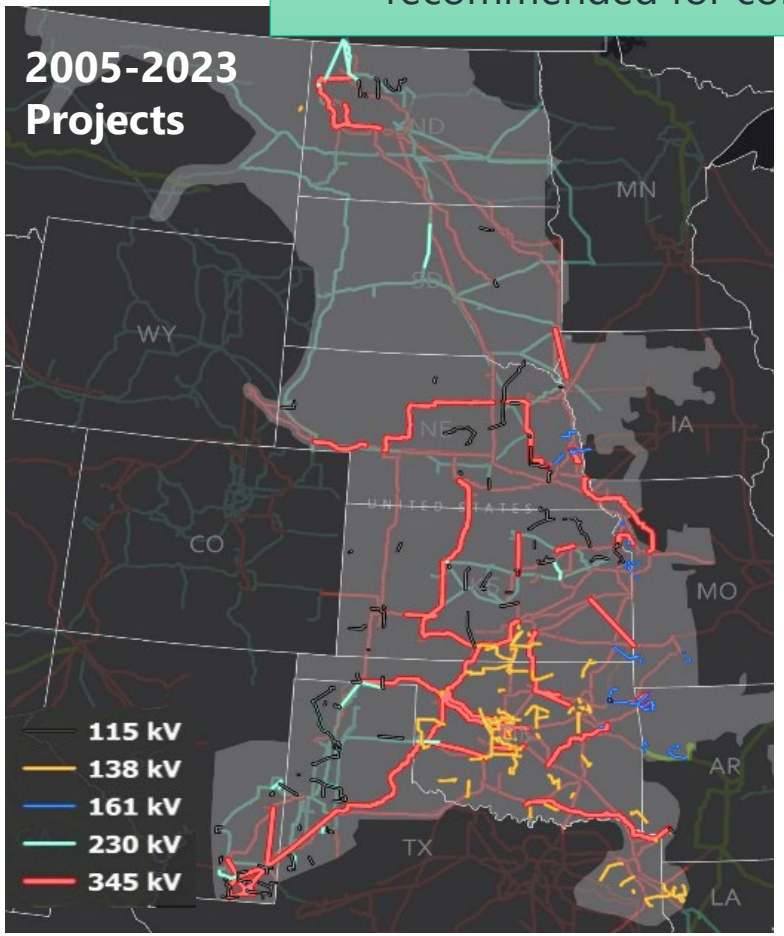
2026 ITP Forecast *including* Spot Loads (2035, Y10)

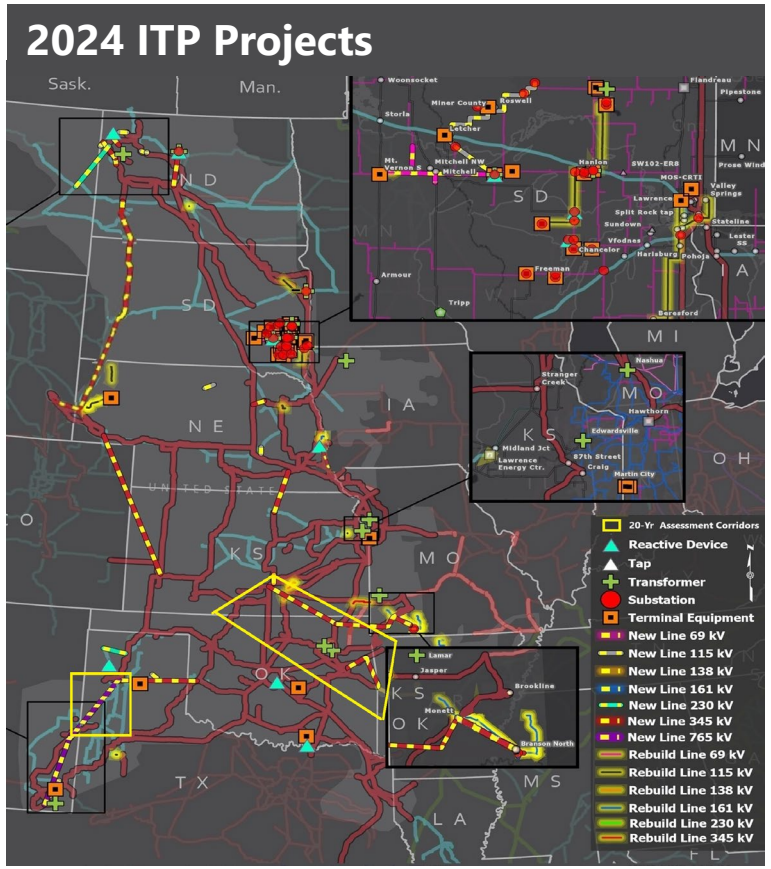
WHAT HAVE WE BEEN DOING SINCE 2007?

$10.04 B has been invested on 345kV transmission since 2007

To enable a 56GW Summer Peak System with plans for 64GWs (2024 ITP Year 10, 2033)

- 2024: First **signs of recent 4–5% annual load growth**
- Pre-2024: Significant 345 kV build-out; **first 765 kV** recommended for construction





PRELIMINARY 765 KV OVERLAY
(FULL SPP FOOTPRINT)

2026 ITP Spot Loads

SPP Southwest Power Pool

Possible 765 kV Northern Options
(2026 ITP)

1. Radial line connecting KS to ND
2. Option 1 + western line to close loop
3. Connect to MISO's 765 kV LRTP

Potter- Crossroads Phantom 765 kV line
(2024 ITP)

Draft 765 kV Overlay Recommended Plan
(2025 ITP)

MW
Sparse
Dense
MW

Note: 2026 ITP points are draft, actual analysis will be utilized to determine optimal locations

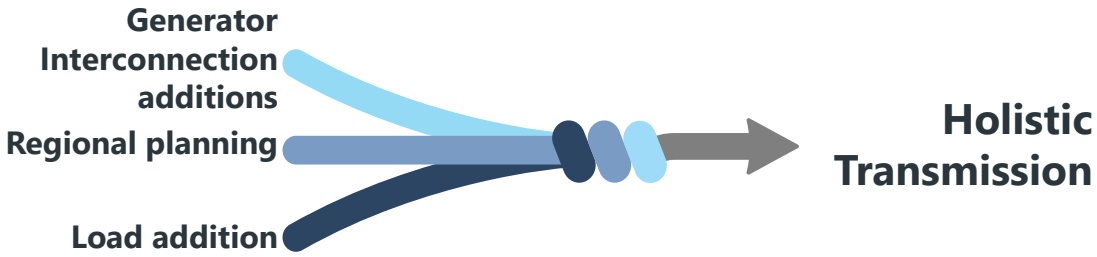
1 inch equals 189 miles

CONSOLIDATE PLANNING PROCESS (CPP)

CPP OVERVIEW

WHAT ARE CPP GOALS?

- Enabling faster resource integration
- Shared costs based on benefits
- More efficient and reliable grid development



Solution Drivers

- Benefit-Based Cost Allocation
- Unified and Forward-Looking Planning Framework

KEY TAKEAWAYS

GENERATOR INTERCONNECTION

The integration of resources is crucial for developing and facilitating an efficient and reliable grid.

Streamlined Assessment

The new streamlined assessment process minimizes delays in generator interconnections, enhancing efficiency and allowing quicker project approvals, ultimately benefiting the overall grid development.

Enhanced Interconnection Deliverables

Fostering a collaborative approach for proactive interconnection planning, cost certainty, and promoting transparency throughout the process.

KEY TAKEAWAYS

TRANSMISSION PLANNING

Redefining how the system is planned together, in a proactive framework.

Streamlined Assessment

Connected CPP-20 (20-year assessment), CPP-10, and the Generator Interconnection Process together for effective resource integration and grid development.

GRID-C Calculation

- GI assigned costs based on transmission usage, projected accreditation needs, CPP-20 portfolio, future generation MWs
- Clear payment terms, risk exposure and cost certainty
- Revenue use aligned with load and GI customer needs

The revision request includes 13 cost allocation policy decisions (2024- 2025) approved by CAWG and RSC

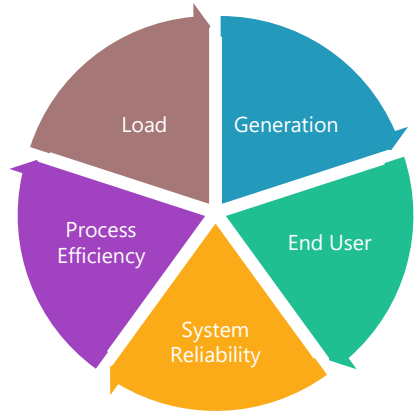
STRATEGIC IMPLICATIONS – INVESTMENT ANALYSIS

GRID-C contributions may be 2–3 times higher than previously assigned Energy Resource Interconnection Study upgrade costs — but the faster timeline, cost certainty, and reduced risk deliver a strong return on investment.

	Current State	With CPP	Estimated Savings
Time to GIA	~18 months	~7 months for Planned Sites	Up to 1 year faster GIA + greater cost certainty
Time to Commercial Ops	Delays from unplanned restudies; longer lead time	7-month lead time supports earlier COD	Millions saved from earlier generation revenue and tax credit access
Restudy Costs	~$9M from 18 restudies (4 yrs)	At least 75% fewer restudies	At least $6M saved every 4 years ($1.5M/year)
Study Costs	~$6M per DISIS Phase 1 & 2	CPP cost-sharing between load & generation	SPP admin cost offset through shared study funding
Base Plan Cost Avoidance	Duplicate EHV builds possible, if GI customers commit to current costs	CPP coordinates ITP & GI plans	$100M+ saved per avoided overlap of major EHV projects

CPP ANTICIPATED BENEFITS

CPP can benefit multiple aspects of transmission planning

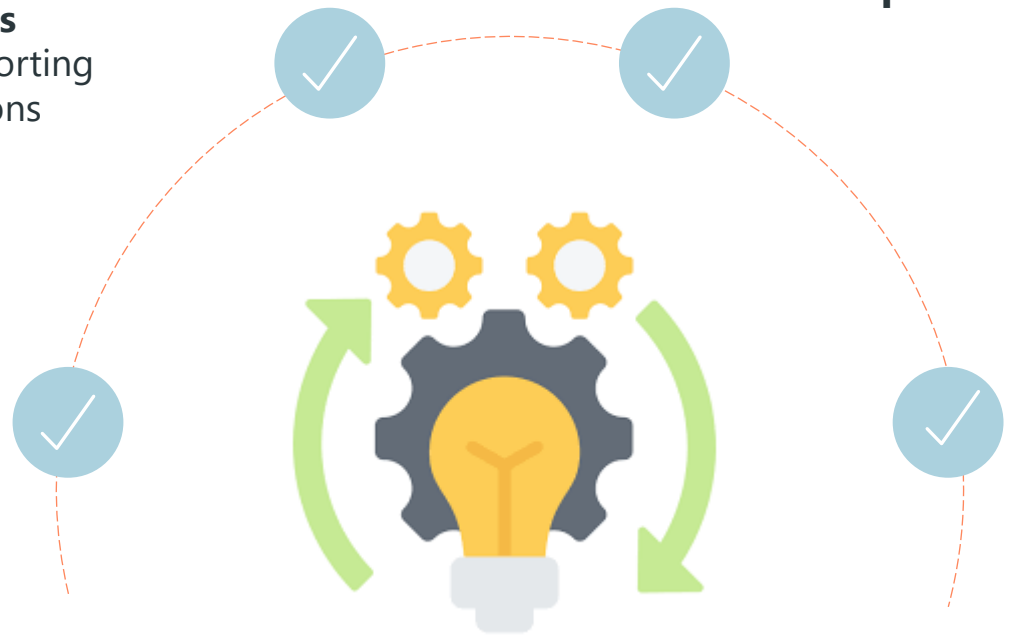


Load Serving Entity

- Provides **cost certainty** and **contributions through a new revenue stream** for supporting cost efficient upgrade transmission solutions
- Allow **proactive inclusion of supply and demand**

Generation Developer

- Significant **reduction or elimination of interconnection restudies**
- Provides **cost certainty for system upgrades** that benefit multiple drivers
- Provides **costs related to benefits**



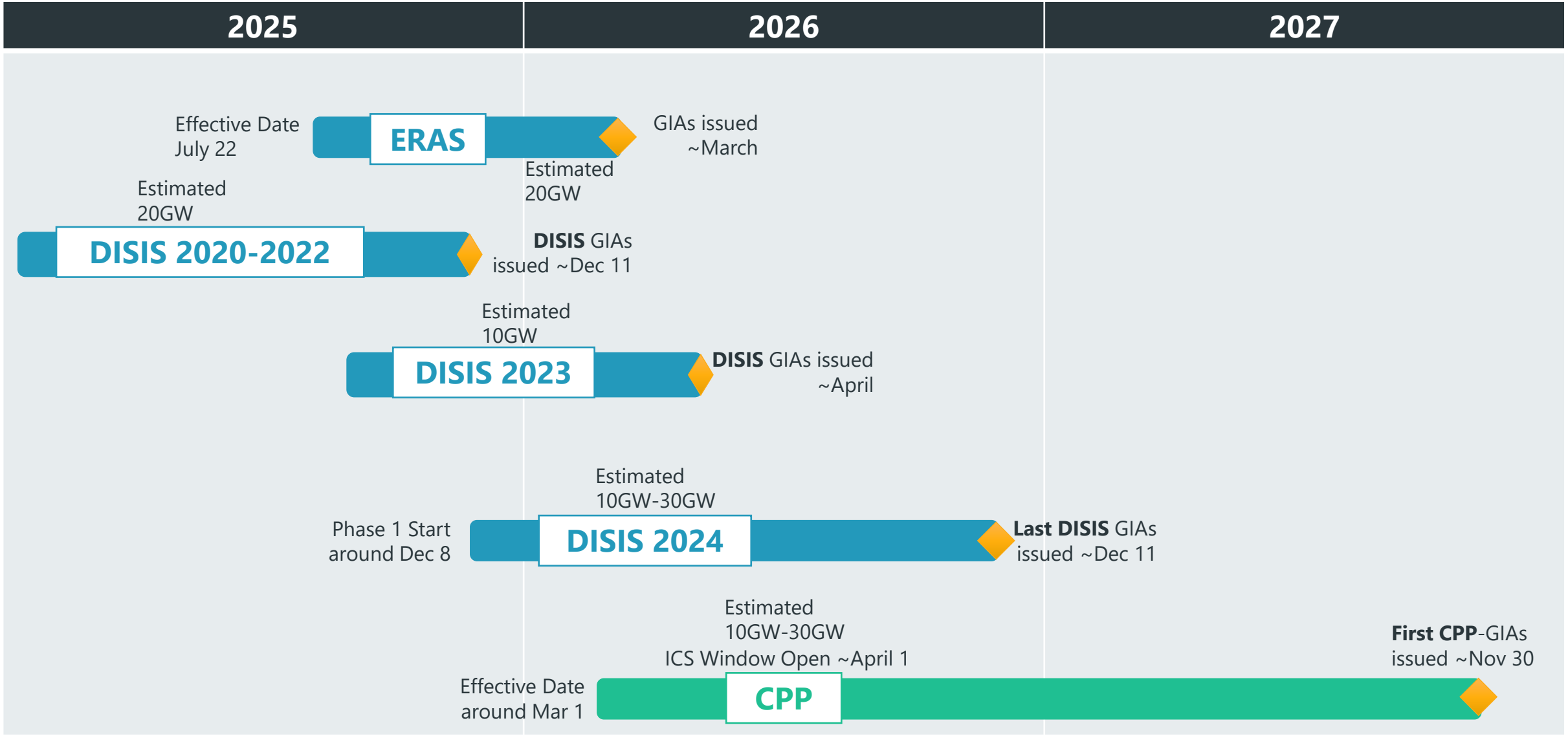
Regional

- **Increases system reliability**
- Identifies **multi-driver transmission needs and transmission solutions**
- Increases **process efficiencies** and delivery of results

End User

- Optimizes transmission solutions to **prevent the compounding effect on transmission rates** from a **piecemeal build-out** approach.

ANTICIPATED GIAS TIMELINE



Q&A

- **How far in advance does a company need to apply?**
  SPP uses a yearly application window for new generation interconnection requests. Historically, projects had to prepare for studies that could take years. That's changing. We've put tremendous focus on streamlining our study process, giving customers far more certainty on their timelines and helping projects move forward faster than ever and getting an answer within a year.

- **What happens with those applications?**
  Each request is evaluated through detailed transmission modeling. We assess existing resources, available transmission capacity, and needed upgrades. The goal is straightforward: ensure every new resource strengthens — not weakens — the reliability of the grid.

- **Are renewables and baseload treated differently?**
  No. Our process is resource-neutral. Solar, wind, natural gas, or storage — all projects go through the same framework. Of course, the technical characteristics of each resource factor into the modeling, but the rules apply consistently across the board.

- **Does SPP ever say no?**
  Instead of rejecting projects, our studies identify the transmission upgrades required to interconnect. Sometimes those upgrades are costly, and it's the developer's choice whether to proceed. So rather than "no," our process provides transparency around feasibility and cost.

Q&A

- **Are most projects tied to capacity needs?**
  Yes. Developers are generally targeting capacity obligations or market opportunities. Every application has a commercial purpose, and interconnection is the key step that makes that purpose possible.

- **Does SPP publish forward-looking studies?**
  Absolutely. Through our Integrated Transmission Planning process — and now with the evolution into the Consolidated Planning Process — we identify where the grid is constrained, where demand is growing, and where investment will have the greatest impact. These public reports act as roadmaps for developers and policymakers alike.

- **Are we making progress in shortening review times?**
  Yes — and this is a major milestone. Just a few years ago, an average interconnection study took about six years. Today, thanks to reforms in our DISIS process, that timeline has dropped to around 12 months for new projects. That is real progress. And we're not stopping there. The upcoming Consolidated Planning Process, or CPP, will cut that timeline again — down to seven months — while providing developers with 100% cost certainty. By combining Generation Interconnection studies with the Integrated Transmission Plan into one optimized process, CPP will set a new standard for interconnection.