



# PRESENTATION TITLE

MIKE ROSS

SR. VICE PRESIDENT, EXTERNAL AFFAIRS &  
STAKEHOLDER RELATIONS

MROSS@SPP.ORG

*Helping our members work together to keep  
the lights on... today and in the future.*



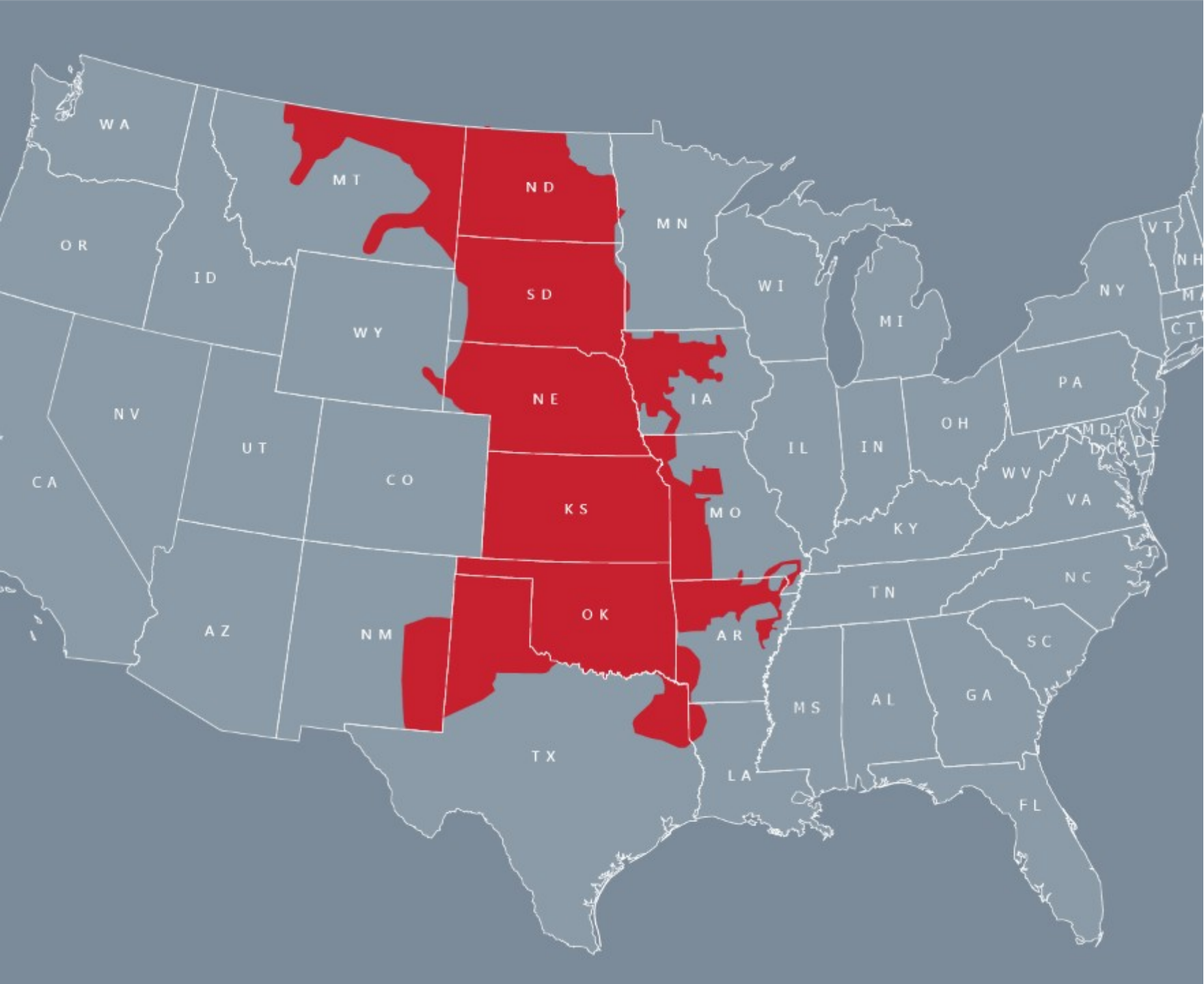
SouthwestPowerPool



SPPorg



southwest-power-pool



# RTO OPERATING REGION

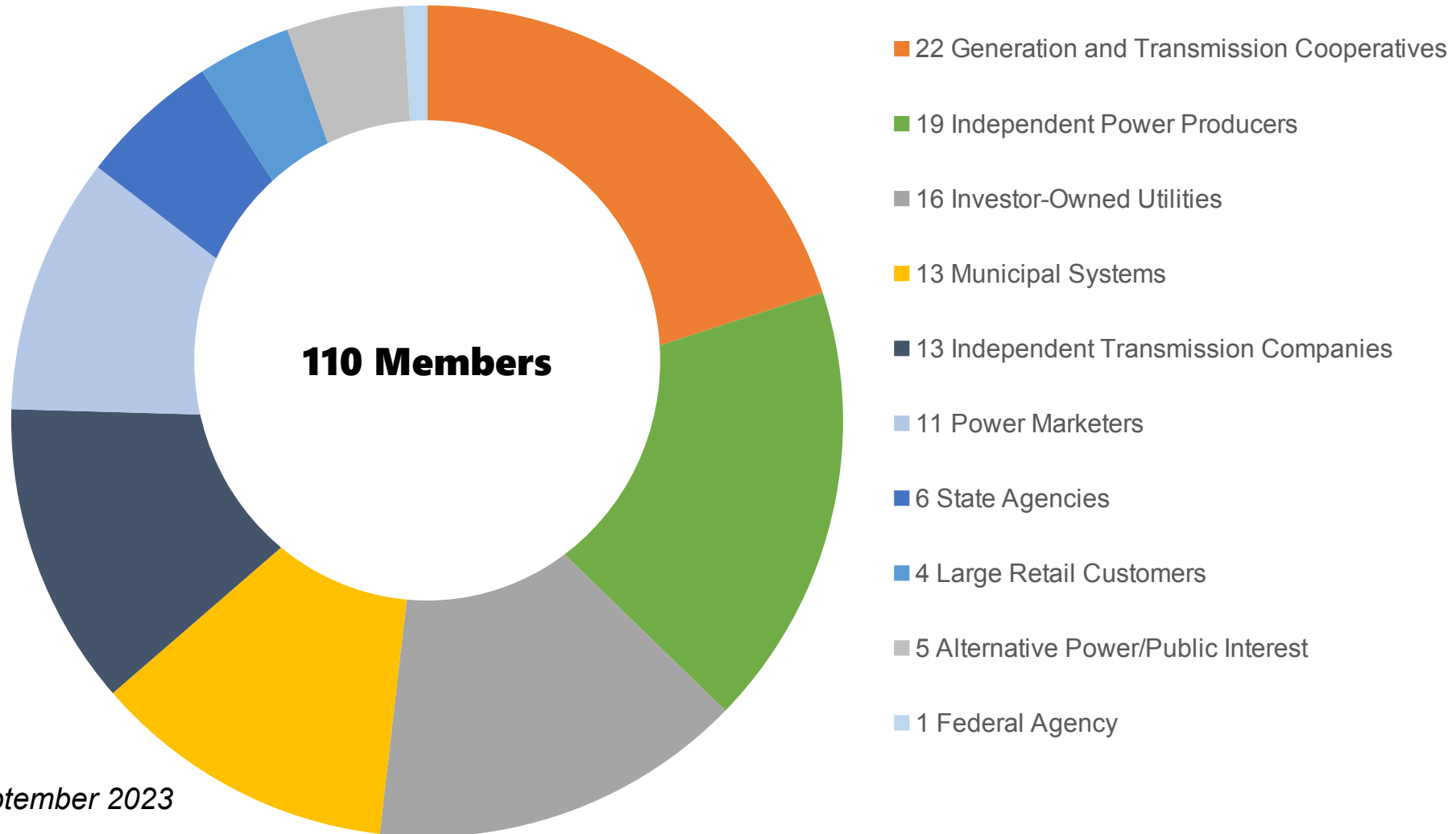
- **552,885** square mile service territory
- **~18 million** population served
- **994\*** generating plants
- **5,199\*** substations

\* In SPP's balancing authority area





# SPP's 110 Members: Independence Through Diversity



*Updated September 2023*

# SPP'S INDEPENDENT BOARD OF DIRECTORS



**Susan Certoma, Chair**  
Elected January 2019, term ends December 2024  
*Member, Finance Committee*



**Elizabeth Moore, Vice Chair**  
Elected October 2020, term ends December 2023  
*Member, Human Resources Committee*  
*Member, Oversight Committee*



**Barbara Sugg, President & CEO**  
Elected January 2020  
*Chair, Corporate Governance Committee*  
*Member, Strategic Planning Committee*



**Larry Altenbaumer**  
Elected July 2005, term ends December 2023  
*Vice Chair, Corporate Governance Committee*  
*Member, Oversight Committee*



**Bronwen Bastone**  
Elected January 2020, term ends December 2022  
*Chair, Human Resources Committee*



**John Cupparo**  
Elected January 2022  
*Chair, Strategic Planning Committee*  
*Member, Human Resources Committee*



**Ray Hepper**  
Elected October 2022  
*Member, Oversight Committee*  
*Member, Finance Committee*



**Josh Martin**  
Elected October 2003, term ends December 2023  
*Chair, Oversight Committee*  
*Ex Officio Member, Corporate Governance Committee*



**Ben Trowbridge**  
Elected January 2022  
*Chair, Finance Committee*  
*Member, Oversight Committee*



**Steve Wright**  
Elected October 2022  
*Member, Strategic Planning Committee*

# 2023 REGIONAL STATE COMMITTEE



**Andrew French, RSC  
President**  
Kansas Corporation  
Commission



**Will McAdams,  
RSC Secretary/Treasurer**  
Public Utility Commission of  
Texas



**Randel Christmann\***  
North Dakota Public  
Service Commission



**Kristie Fiegen\***  
South Dakota Public Utilities  
Commission



**Mike Francis\***  
Louisiana Public Service  
Commission



**Todd Hiatt\***  
Oklahoma Corporation  
Commission



**Chuck Hutchison**  
Nebraska Power Review  
Board



**Sarah Martz**  
Iowa Utilities Board



**Pat O'Connell**  
New Mexico Public  
Regulation Commission



**Scott Rupp**  
Missouri Public Service  
Commission



**Justin Tate**  
Arkansas Public Service  
Commission



**John Tuma**  
Minnesota Public  
Utilities Commission



# REGIONAL STATE COMMITTEE

Retail regulatory commissioners from:

Arkansas	Minnesota	North Dakota
Iowa	Missouri	Oklahoma
Kansas	Nebraska	South Dakota
Louisiana	New Mexico	Texas

Primary responsibility for:

- Cost allocation for transmission upgrades
- Approach for regional resource adequacy
- Allocation of transmission rights in SPP markets



# OUR MAJOR SERVICES

- Facilitation
- Reliability Coordination
- Balancing Authority
- Transmission Service/Tariff Administration
- Market Operation
- Transmission Planning
- Training

## OUR APPROACH:

Regional, Independent, Cost-Effective and Focused on Reliability





# RELIABILITY COORDINATION: AIR TRAFFIC CONTROLLERS OF THE BULK POWER GRID

- Monitor grid 24 x 365
- Anticipate problems
- Take preemptive action
- Coordinate regional response
- Independent
- Comply with more than 5,500 pages of reliability standards and criteria



# BALANCING ELECTRIC SUPPLY AND DEMAND

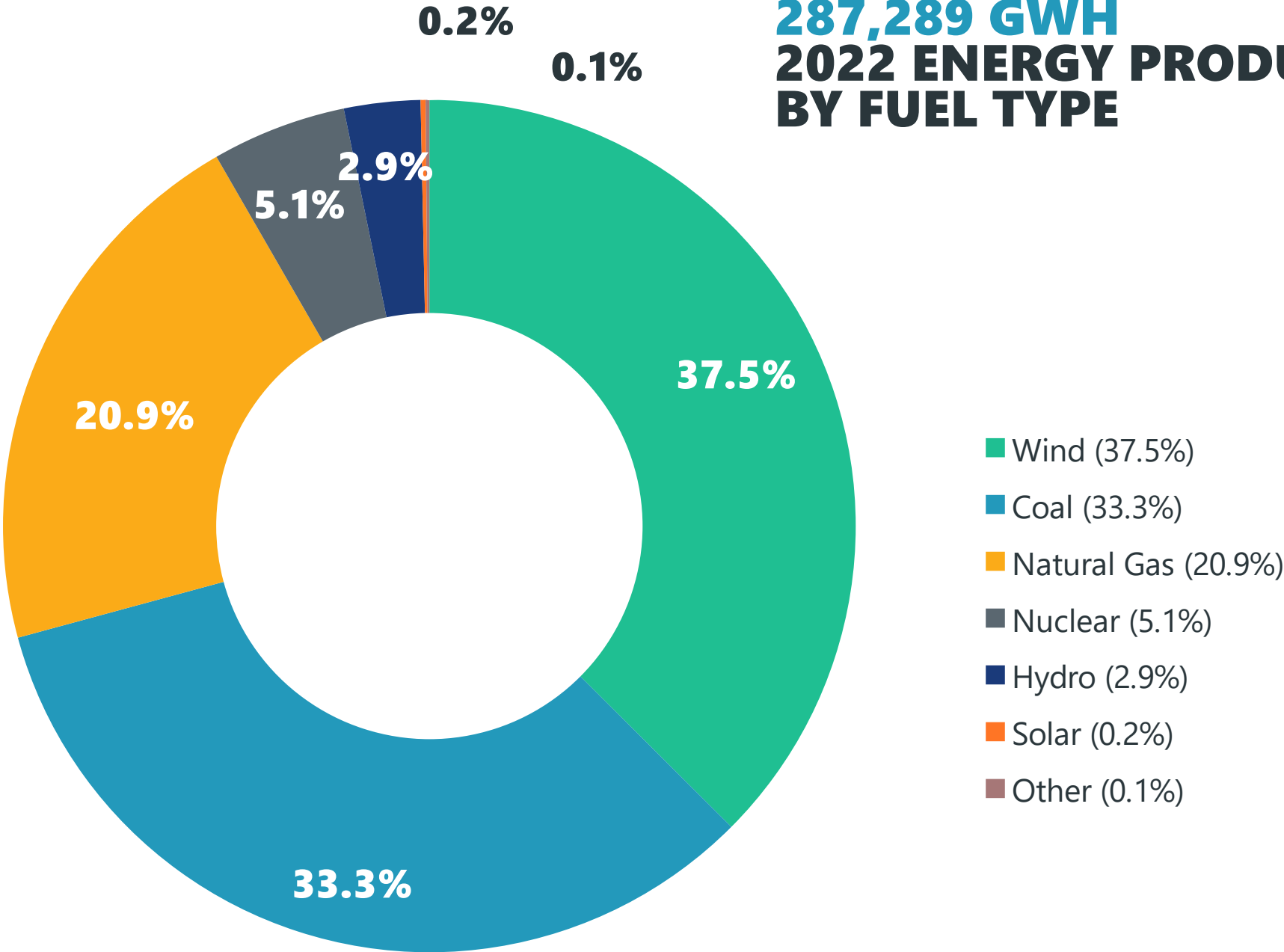
## SUPPLY/GENERATION

- **98,608 MW** Nameplate Capacity
- **64,486 MW** Accredited Capacity *(as of Summer 2022)*

## DEMAND/LOAD

- **56,184 MW** all-time coincident peak load (8/21/23)
- **47,157 MW** Winter peak (12/22/22)

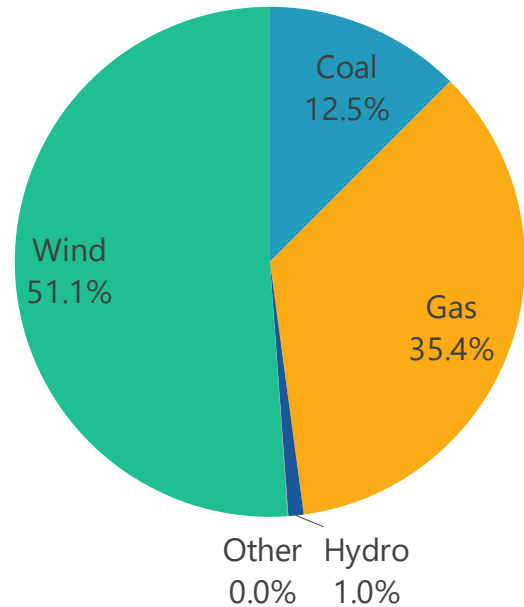
# 287,289 GWH 2022 ENERGY PRODUCTION BY FUEL TYPE





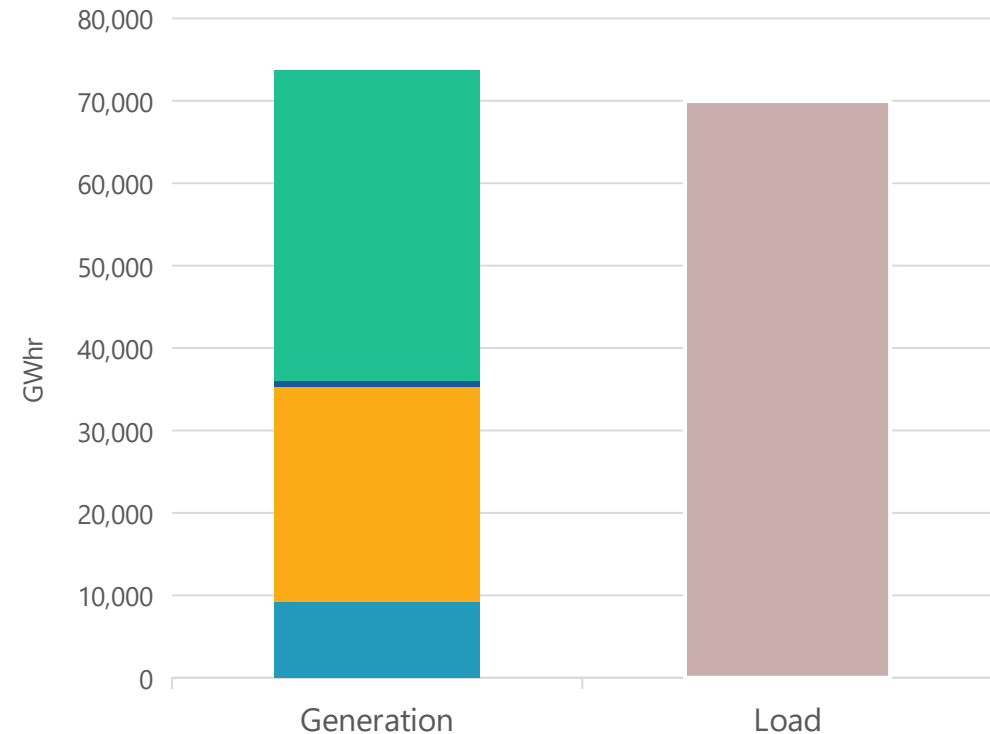
# OKLAHOMA GENERATION AND LOAD

### Fuel Mix: SPP Generation in Oklahoma, 2022



■ Coal ■ Gas ■ Hydro ■ Nuclear  
■ Other ■ Solar ■ Wind

### Oklahoma Generation and Demand, 2022



■ Coal ■ Gas ■ Hydro ■ Nuclear  
■ Other ■ Solar ■ Wind ■ Load

# SPP MARKETS

## Transmission Service

Participants buy & sell use of transmission lines owned by different parties

## Integrated Marketplace

Participants buy & sell wholesale electricity in day-ahead & real-time

- **Day-Ahead Market** commits cost-effective & reliable generation for region
- **Real-Time Balancing Market** economically dispatches generation to balance real-time generation & load while ensuring reliability
- **Consolidated Balancing Authority** operates as a single region

## Western Energy Imbalance Service Market

Contract-based, real-time balancing market in Western Interconnection

# MARKETPLACE BENEFITS

- **\$7.95 billion** in cumulative benefits as of January 2023
- **\$1.8 billion** annual savings
- **\$30/MWh** Lowest-cost wholesale energy in nation\*
- **1,000% increase** in renewable energy capacity
  - 3 GW in 2009 to 35 GW in 2023

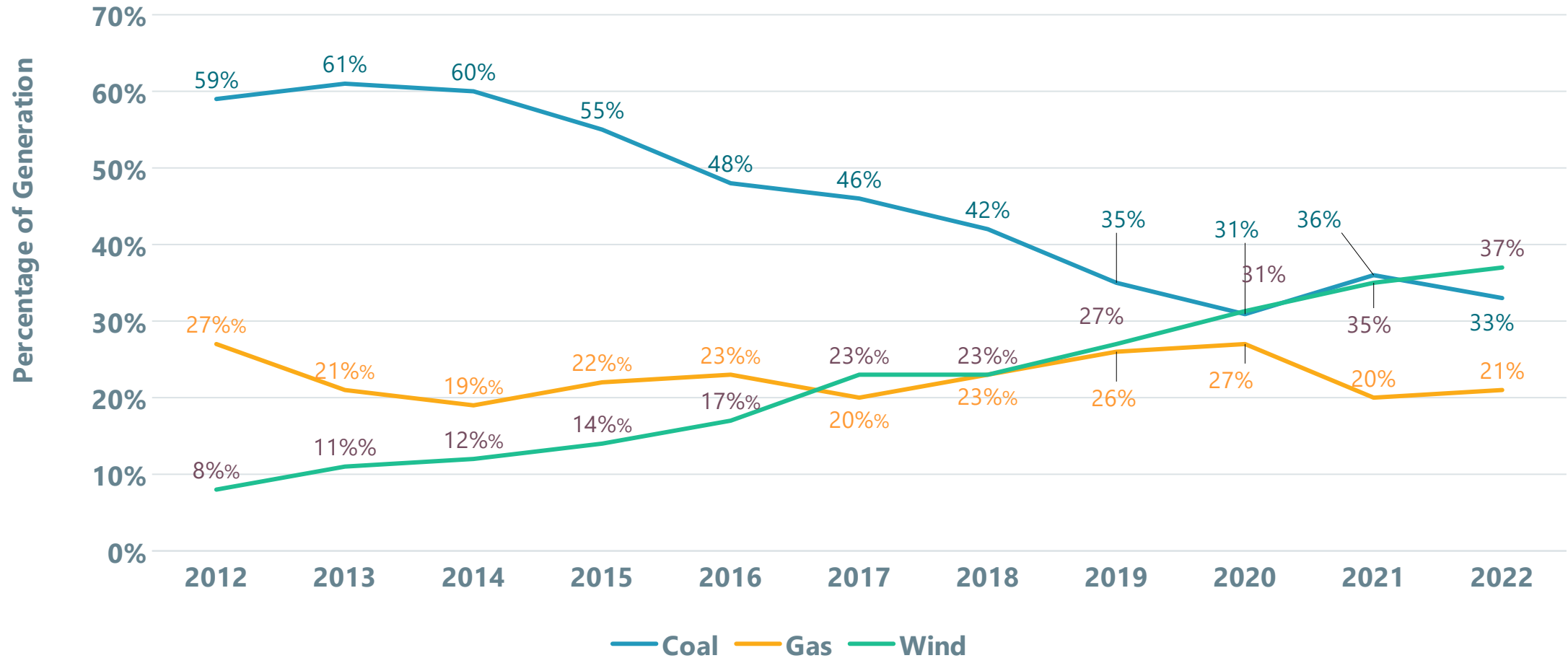
*\* FERC 2021 calculations based on year-to-date spot power prices*



# OUR EVOLVING ENERGY MIX

Coal and gas use has decreased, while wind has increased

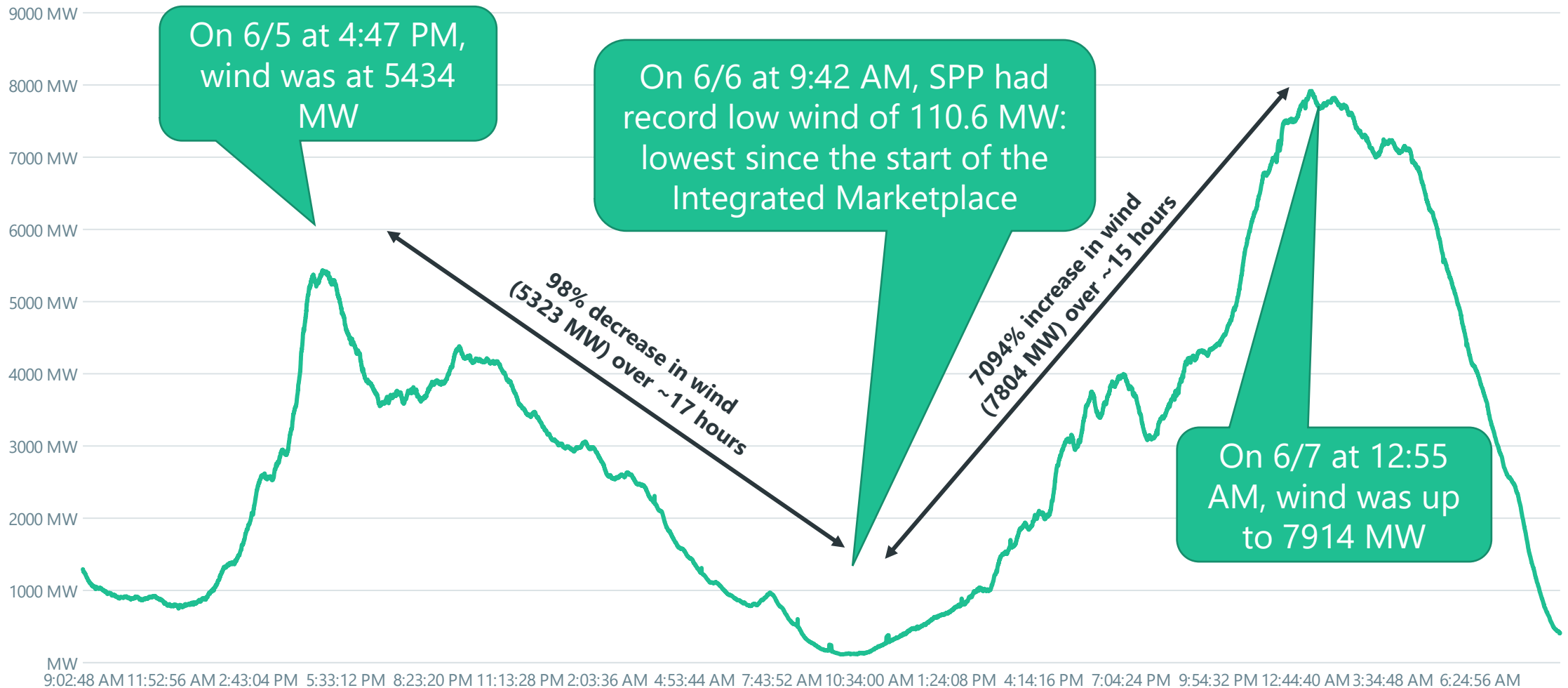
Trend By Year



# WIND IN SPP'S SYSTEM

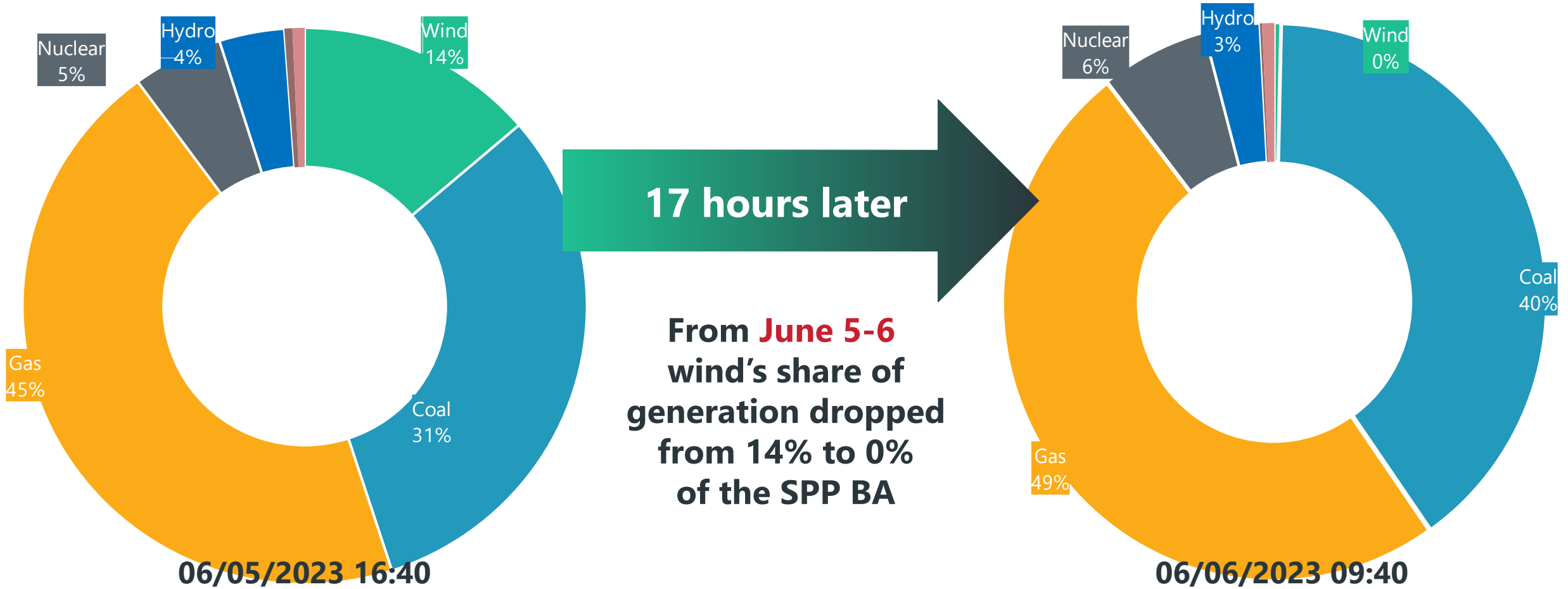
- **30,487 MW** Wind installed today
  - 14,758 turbines at 244 wind resources in the eastern interconnection (most are 80m hub height)
- **23,838 MW** Maximum wind output (3/16/23)
- **110 MW** Minimum wind output (6/6/23)
- **88.51%** All-time maximum wind penetration (3/29/22)
- **37.5%** Average wind penetration (2022)

# WHY FUEL DIVERSITY MATTERS: WIND RAMP AND RECORD LOW (6/6/23) IN INTEGRATED MARKETPLACE

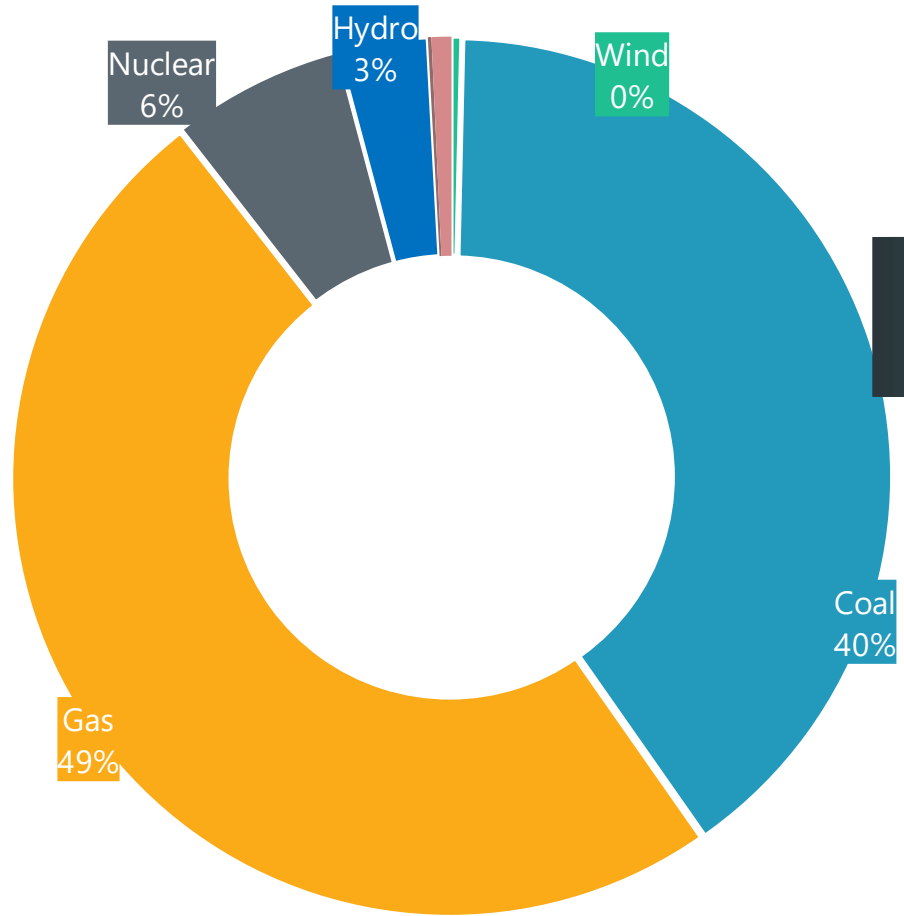




# THE DIFFERENCE A DAY MAKES: JUNE 5-6, 2023



# THE DIFFERENCE A DAY MAKES: JUNE 6-7, 2023

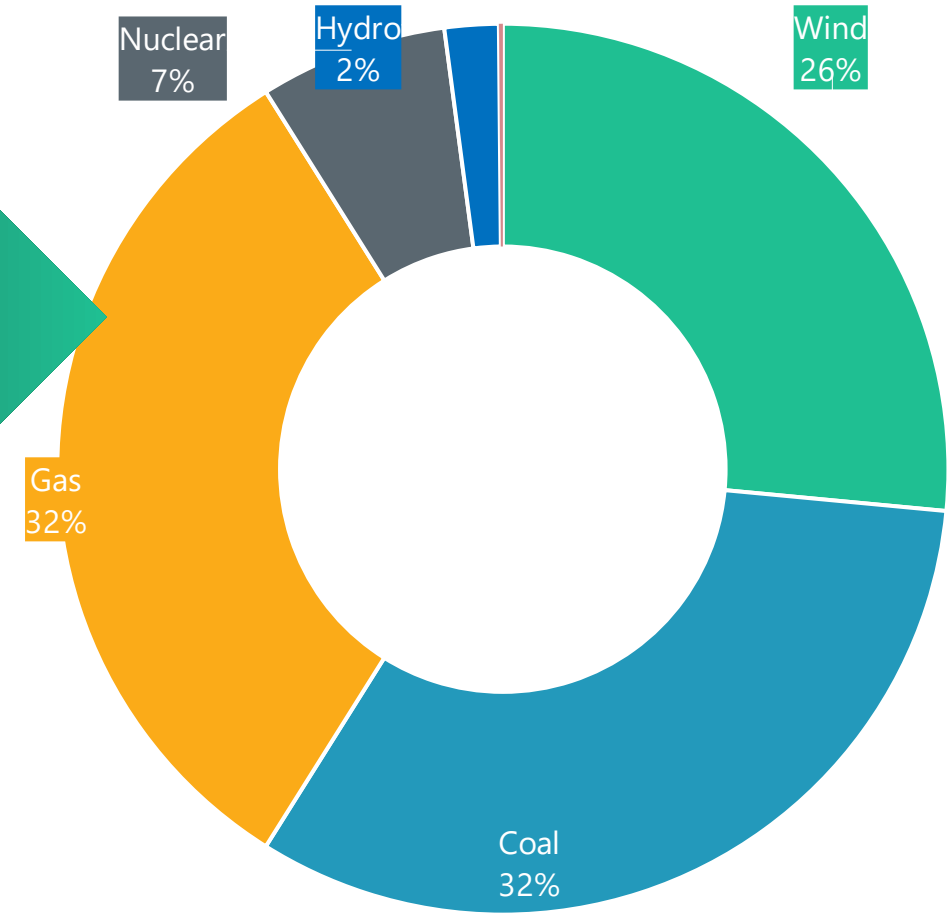


06/06/2023 09:40



17 hours later

From **June 6-7** wind's share of generation increased from 0% to 27% of the SPP BA



06/07/2023 12:40

# TRANSMISSION PLANNING CONSIDERATIONS

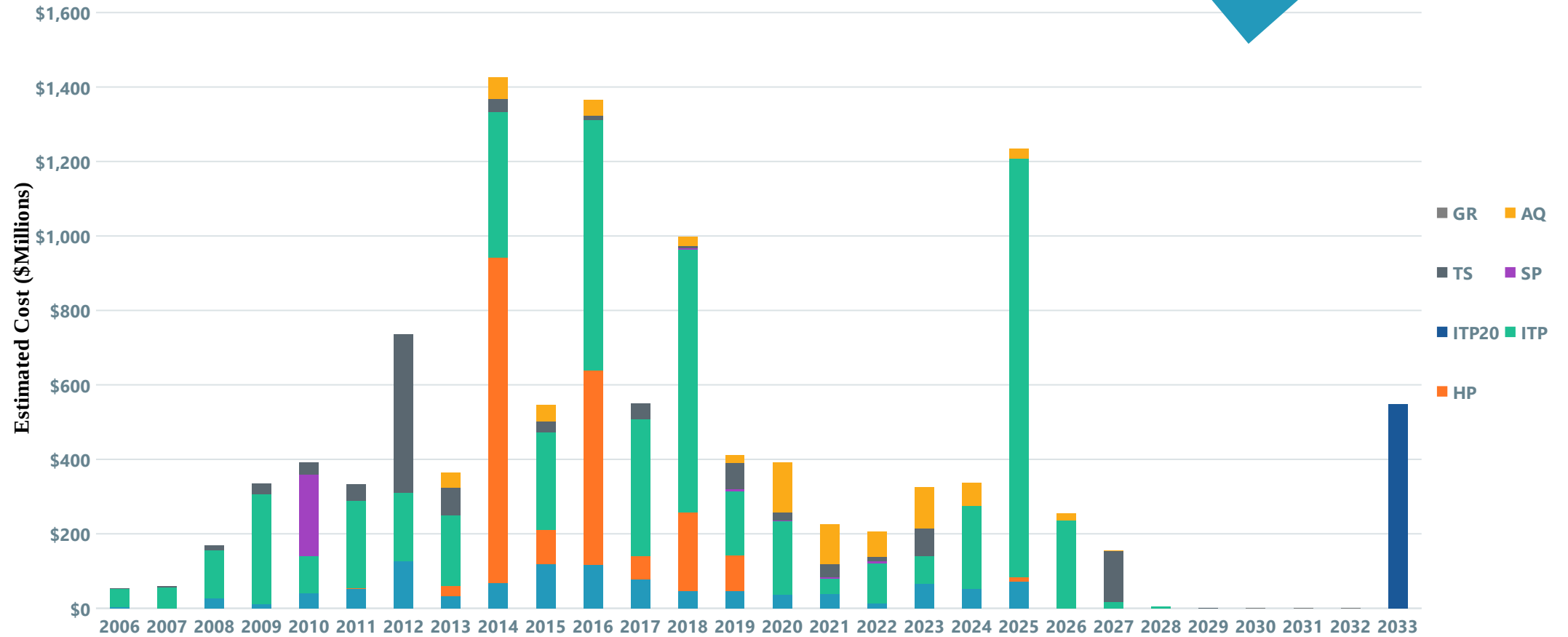
Must take into account a number of considerations, including

- Reliability
- Economics
- Public Policy



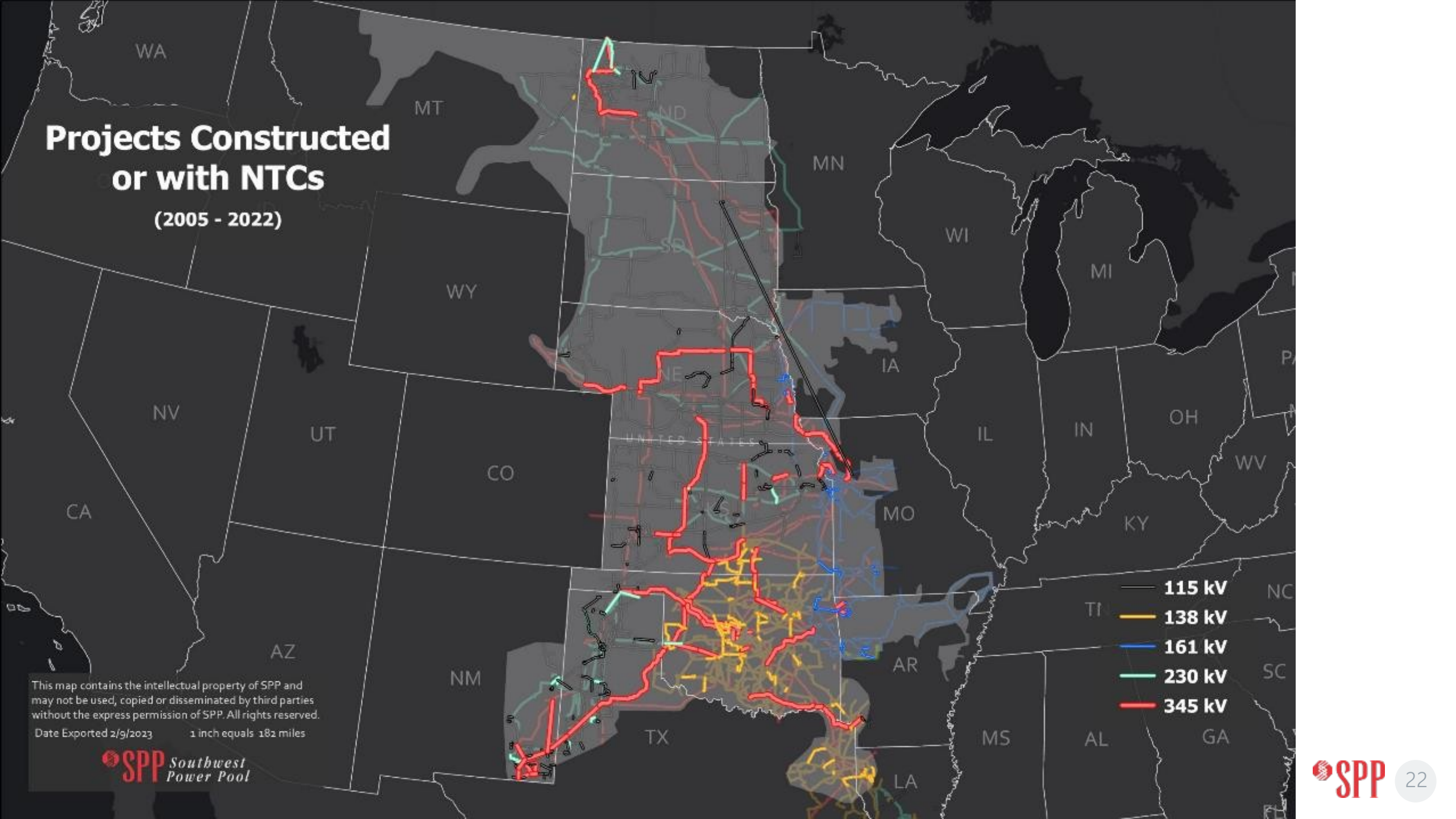
# INVESTMENT BY IN-SERVICE YEAR

SPP's study processes have resulted in direction of ~\$12.3 billion in transmission investment since 2006



# Projects Constructed or with NTCs

(2005 - 2022)

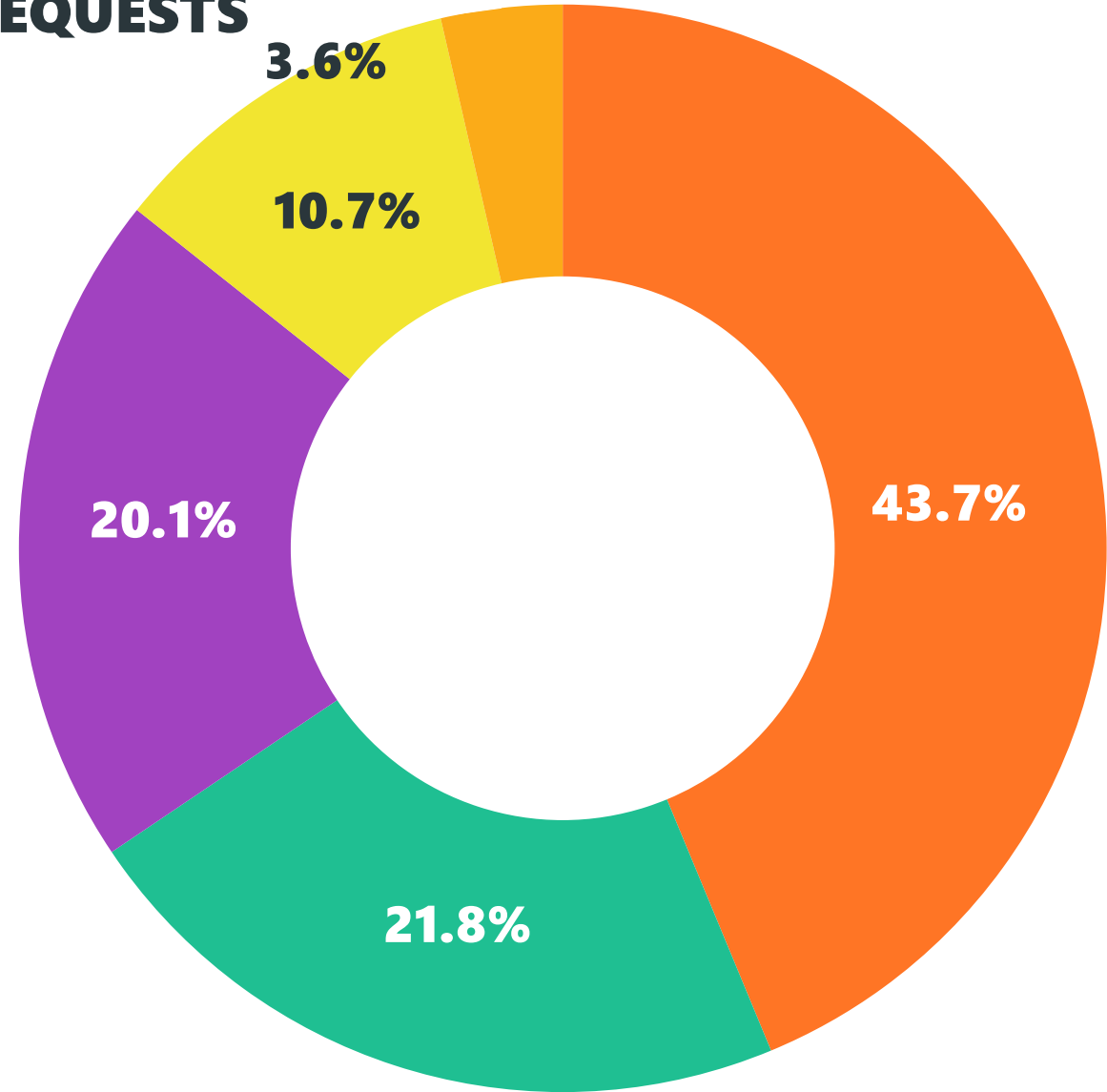


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Date Exported 2/9/2023 1 inch equals 182 miles

# 95.2 GW GENERATOR INTERCONNECTION REQUESTS UNDER STUDY

AS OF AUGUST 31, 2023

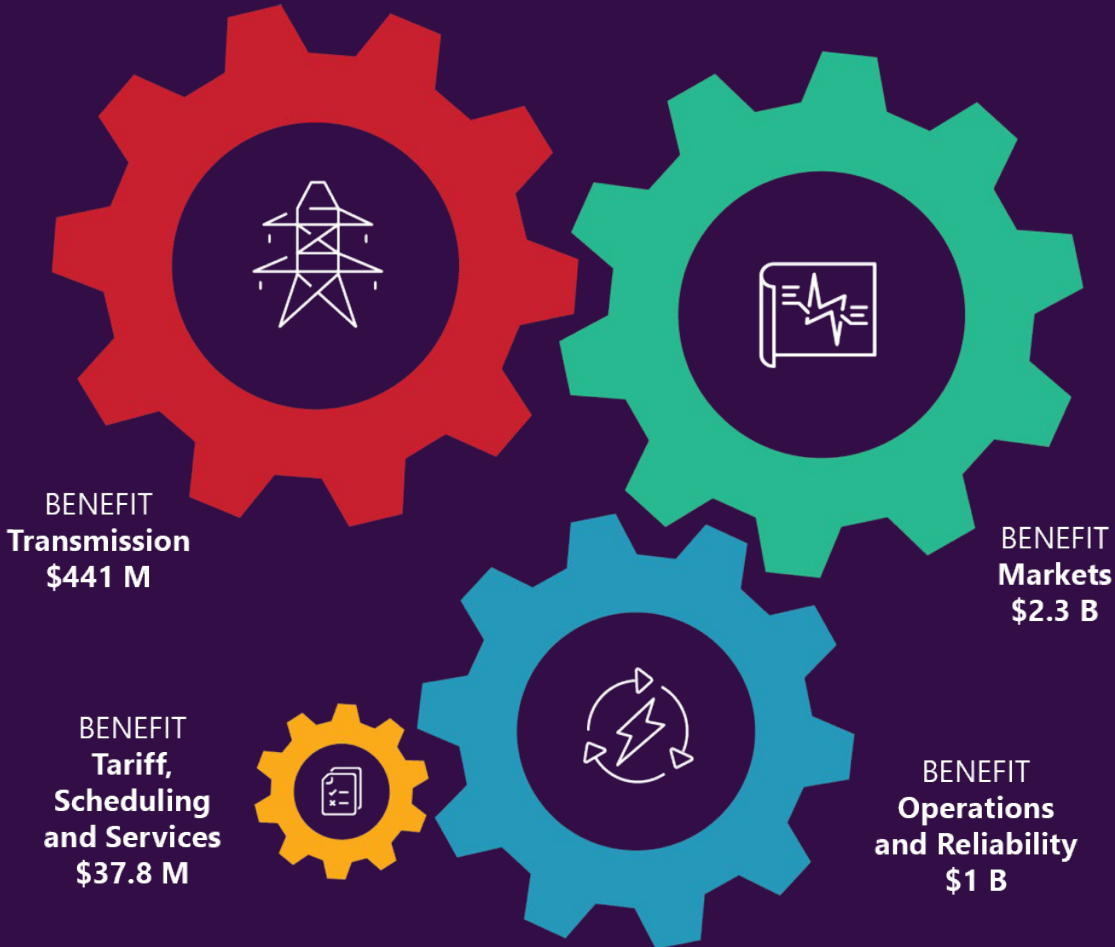


- Solar (41,620 MW)
- Wind (20,791 MW)
- Storage (19,156 MW)
- Hybrid: renewables + storage (10,165 MW)
- Gas/Thermal (3,445 MW)



# \$3.787 BILLION

## 2022 SAVINGS AND BENEFITS



### Operations and Reliability: \$1 billion

SPP operates from a regional perspective. This reduces costs and required energy reserves and increases efficiency.

### Markets: \$2.3 billion

SPP's Integrated Marketplace combines efficient and economic day-ahead, real-time and transmission markets.

### Transmission: \$441 million

SPP's collaborative, stakeholder-driven transmission planning processes result in robust infrastructure and have rapidly and reliably integrated renewables.

### Tariff, Scheduling and Services: \$37.8 million

SPP's industry-leading services and training meet the compliance, settlements, engineering, tariff and scheduling needs of our customers on a regional scale.