NDEE Power Summit
Powering the Future

October 1, 2025

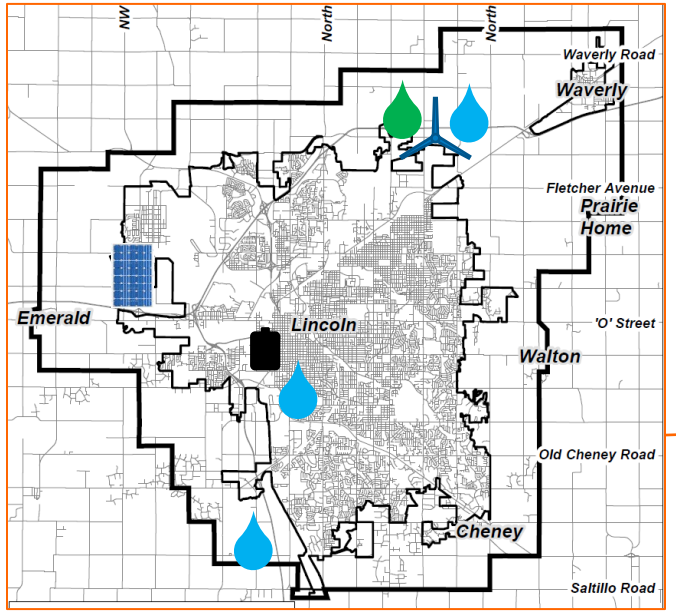
Jason Fortik
Vice President, Power Supply, LES
Chair, NPA Joint Planning Subcommittee

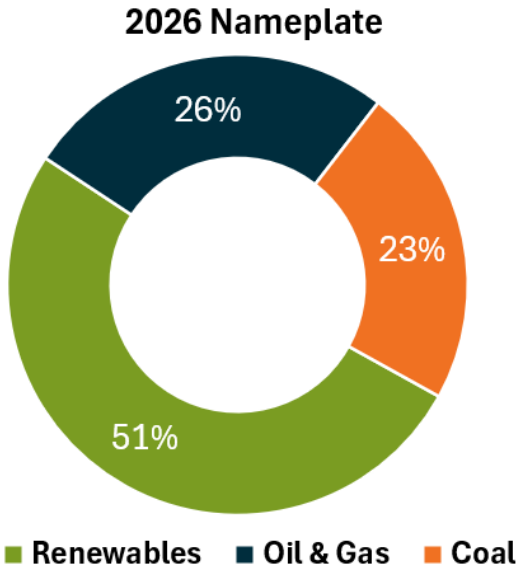
Getting to Know LES…

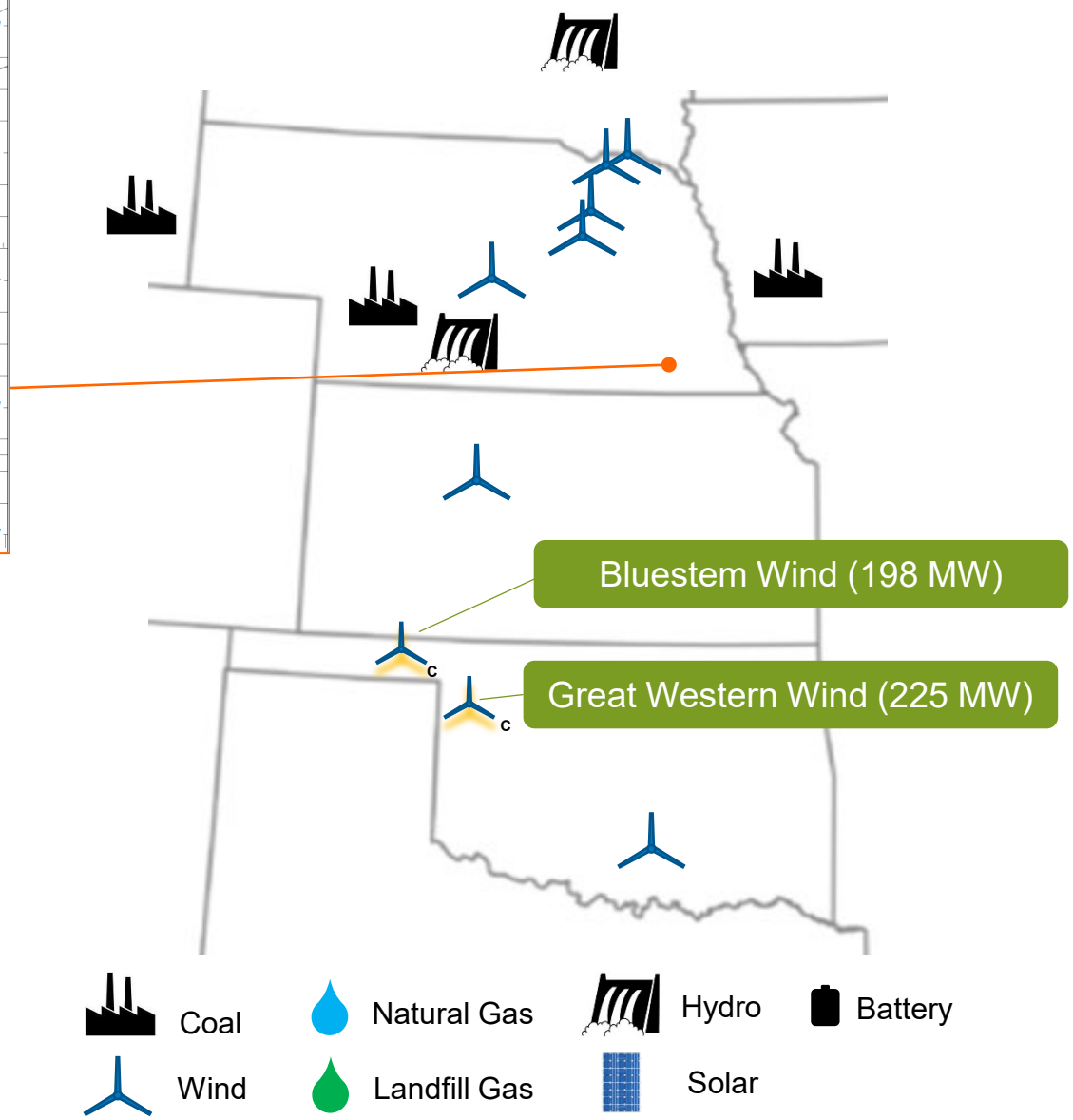
- 153,064 Retail Customers
  23rd largest U.S. public power utility
- 819 MW Peak Demand
  August 2023

LES Resource Portfolio (2026)

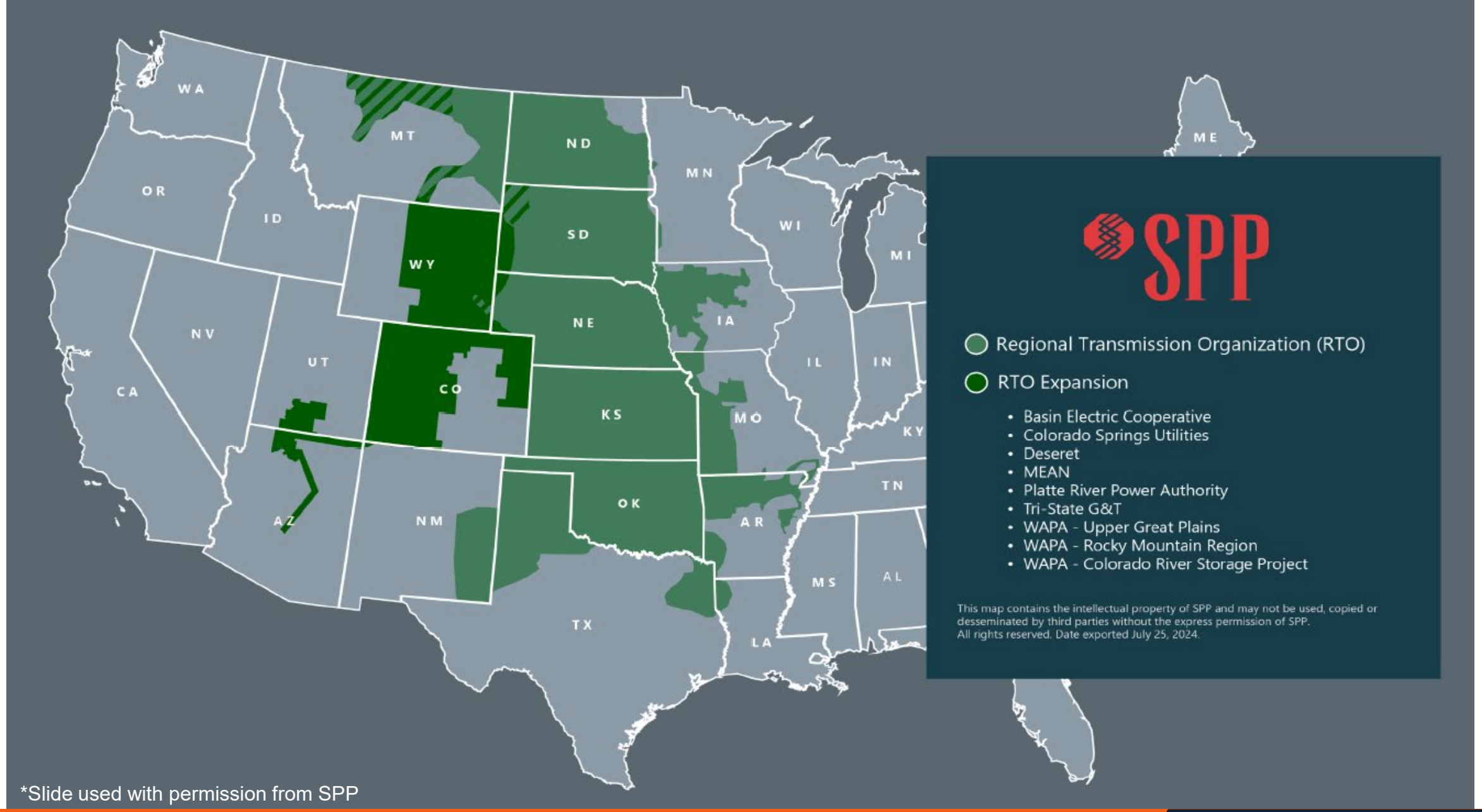
Fuel Type	MW	%
Coal	389.4	23%
Hydro	147.6	9%
Natural Gas	451.3	26%
Wind	727.0	42%
Landfill Gas	4.8	0.3%
Solar	3.6	0.2%
Battery	3.0	0.2%







- LES either does not receive or is selling the Renewable Energy Certificates (RECs) associated with its applicable resources and the renewable attributes reside with the REC owner.
- C – Capacity-only resource



*Slide used with permission from SPP

Winter Storm Uri Temperatures
February 2021

Most of the SPP footprint experienced extremely cold temperatures during Winter Storm Uri. This caused generating plant, fuel delivery, and customer load curtailment issues, and prompted SPP to review its generation resource adequacy requirements.

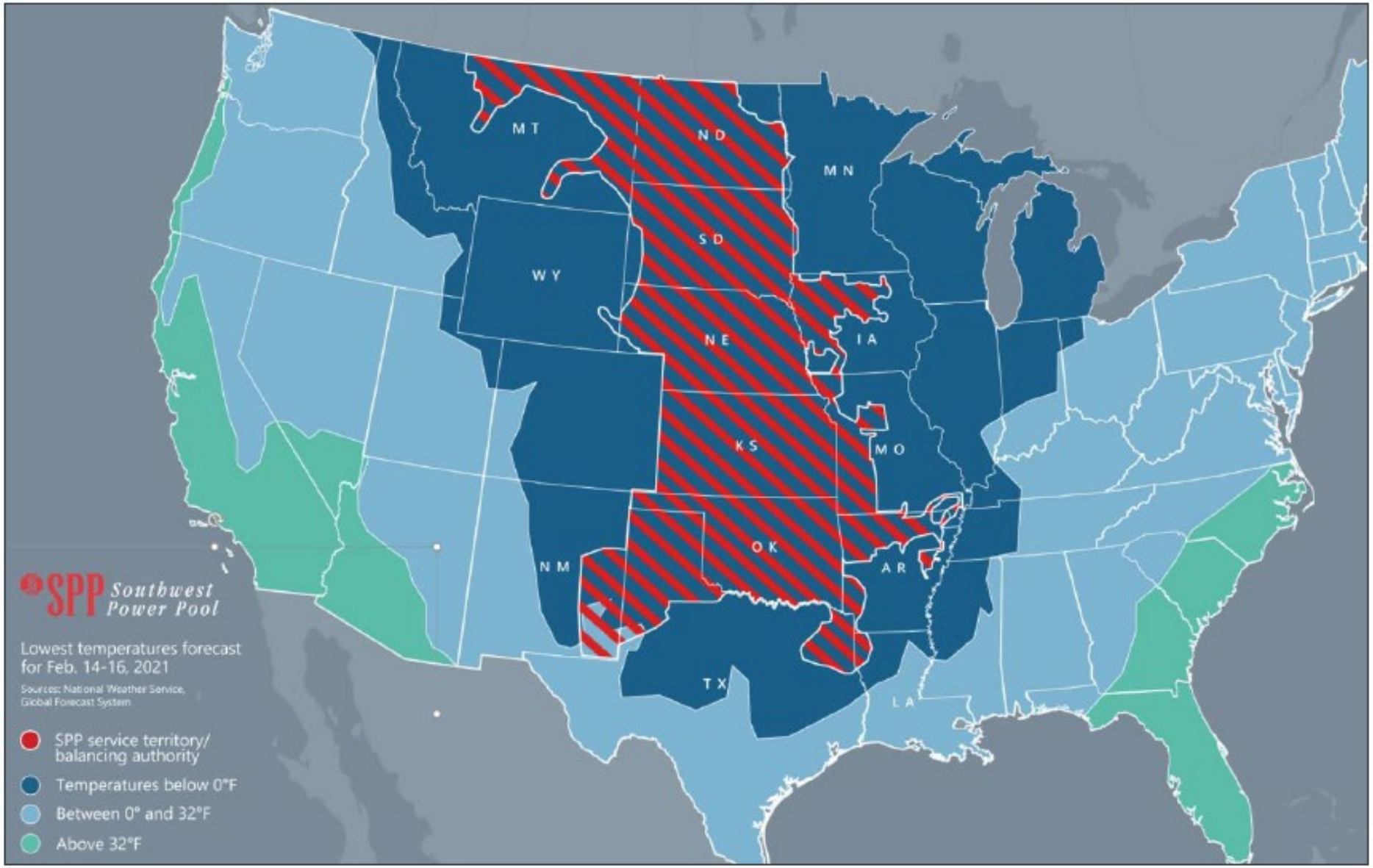
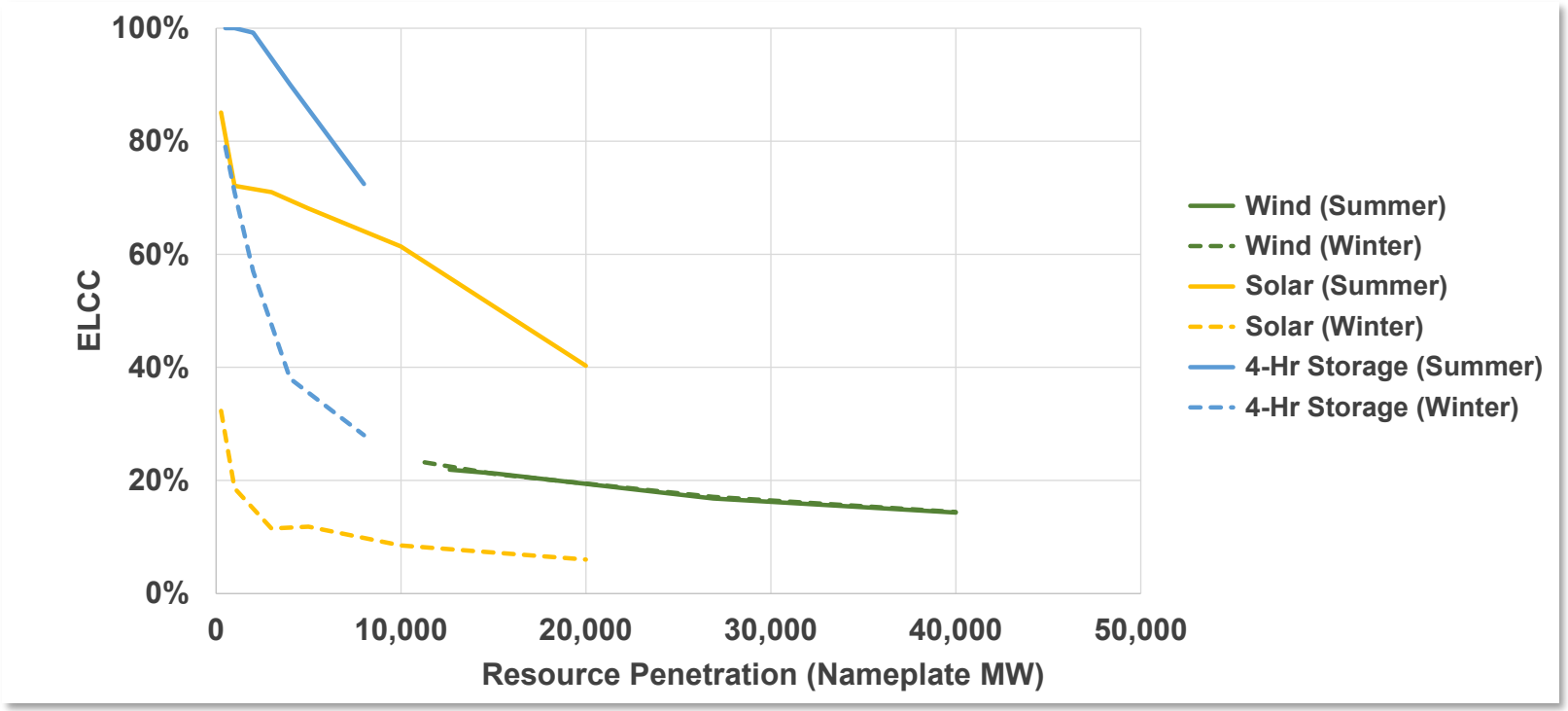


Image from “A Comprehensive Review of Southwest Power Pool’s Response to the February 2021 Winter Storm” published July 19, 2021

SPP Resource Adequacy Regulations
Proposed Changes for 2026

Effective Load Carrying Capability (ELCC)

Derated accreditation of non-dispatchable resources to reflect diminished load-serving benefits as penetration of like resources increases.



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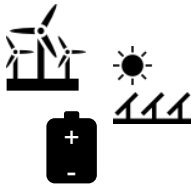

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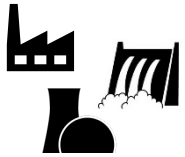


Performance Based Accreditation (PBA)
Derated accreditation of dispatchable resources to reflect historical forced outages and forced derates over the last seven years.

Accredited Capacity Planning Reserve Margin (ACAP PRM)
New SPP reserve margin requirement (peak load + X%) for both the summer and winter seasons.

The result of these new regulations is that most entities will see reductions in the ratings of their generating resources that count toward meeting their resource adequacy obligations in the SPP regional footprint.

Nebraska Power Review Board and Nebraska Power Association Organizational and Statutory Background Information

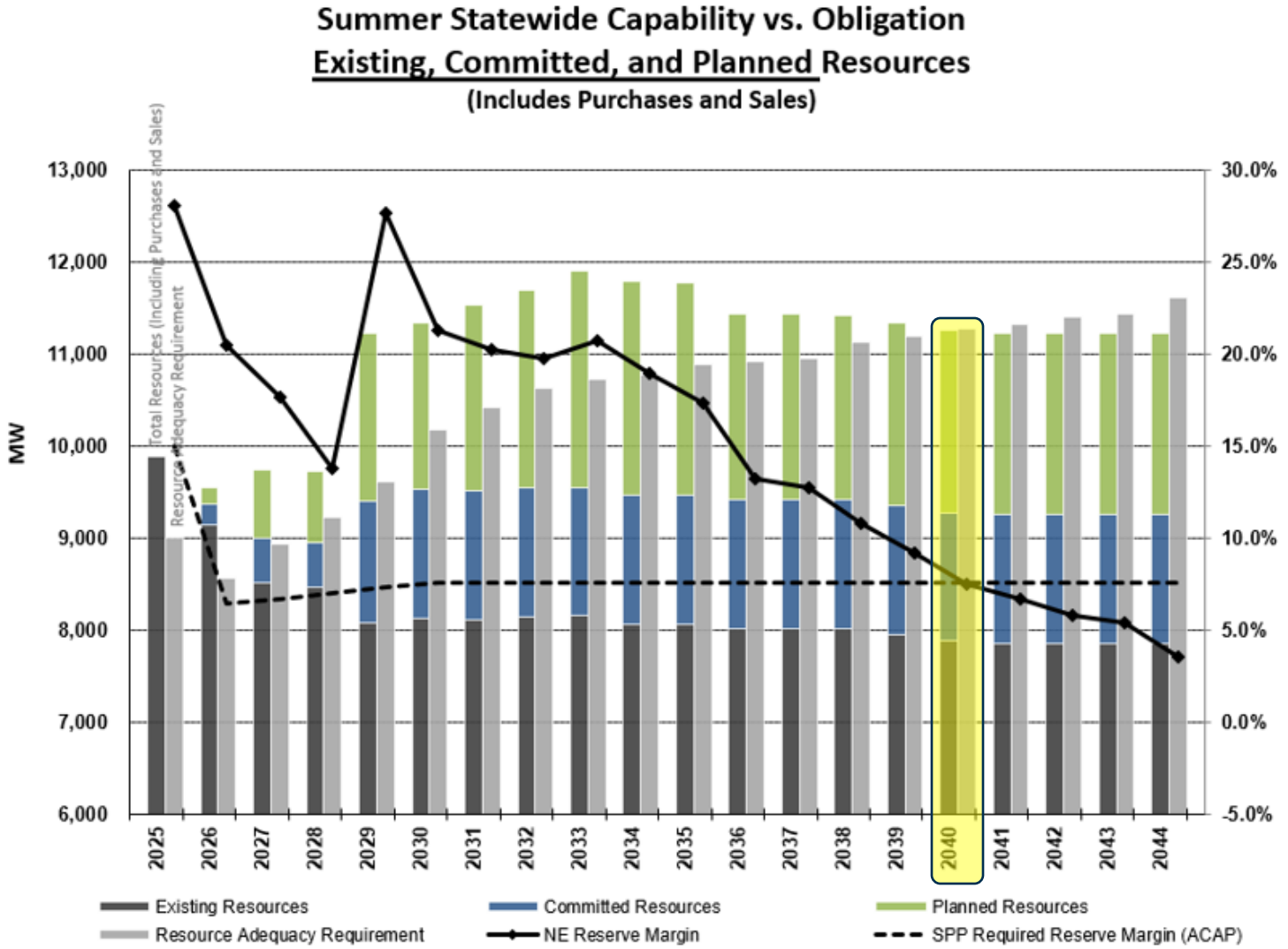
- **Nebraska Power Review Board (NPRB)**
  - State agency formed in 1963 to regulate Nebraska's publicly owned electric utility industry
  - Five-member Board approved by the Governor and confirmed by the Legislature
- **Nebraska Power Association (NPA)**
  - Voluntary organization of municipal, public power district, and cooperative electric utilities (166 members)
  - Formed in 1980 to address statewide electricity policies and issues. Administered by LES
- **State Statute 70-1025**
  - Requires an annual statewide report on electric demand and generation for a 20-year period
  - NPA is the designated entity to provide this report to the NPRB

Nebraska's Projected Peak Electrical Demand Growth

- **Average annual demand growth rate is 1.7% per year from 2025 through 2044**
  - The utilities continue using probability-based rankings to determine the traditional customer electrical loads that are included in the forecast
  - Non-traditional, large, single point electrical loads are included in the forecast if the host utility has determined that there is a sufficiently high degree of confidence that the load will materialize

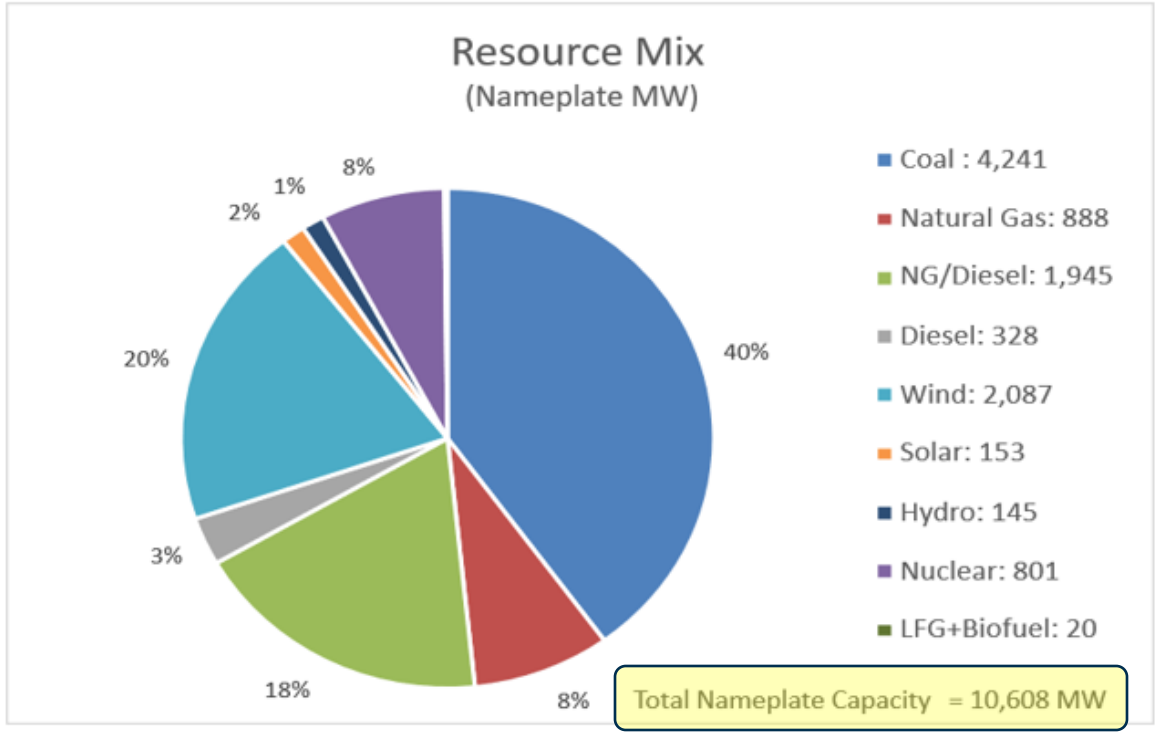
- **The 2025 growth rate is elevated from the 1.4% growth rate shown in last year's report and reflects additional information obtained for proposed large loads**

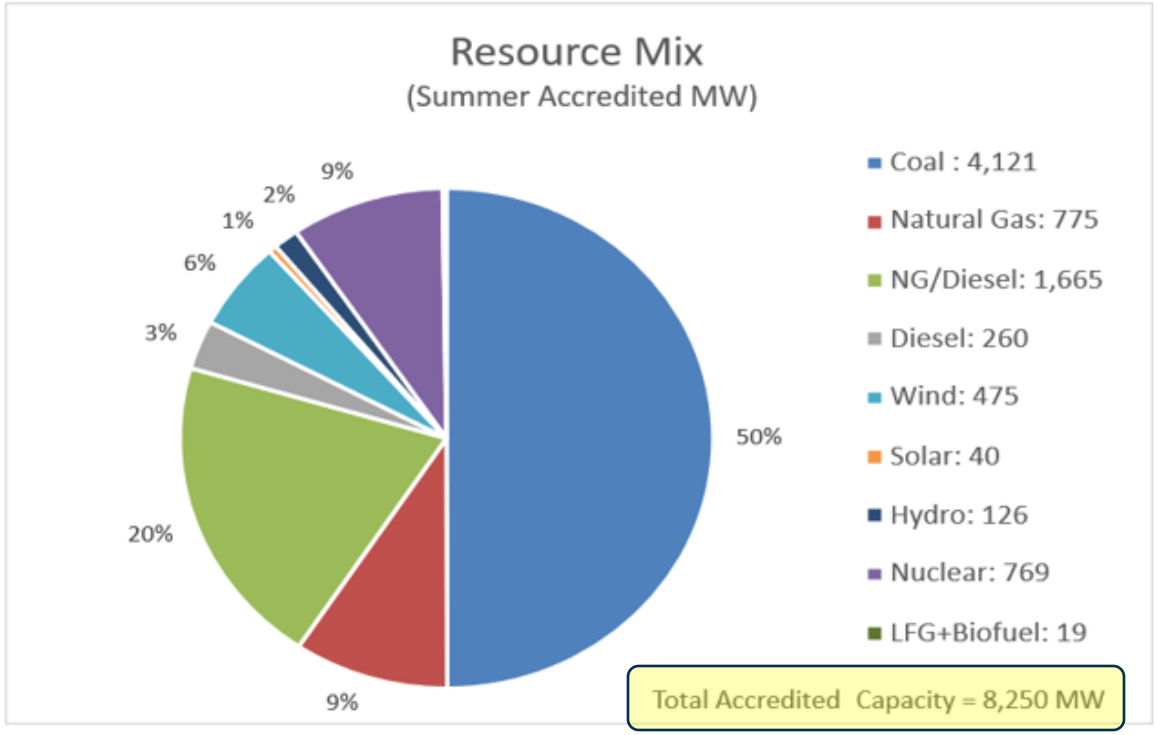
With Nebraska's fleet of Existing, Committed, and Planned* electrical generators, the State would drop below the Southwest Power Pool's expected 7.6% summer Accredited Capacity (ACAP) Planning Reserve Margin in 2040



*Regulatory approvals (e.g. planning, zoning, environmental, etc.) along with NPRB approval may still be required for Planned resources. The timely receipt of these approvals will have a direct effect on each utility's ability to comply with the Planning Reserve Margin out to year 2040

Existing Electrical Generating Resources Categorized by Fuel Type Using both Nameplate and Accredited Ratings*





- **1,173 MW of Firm Power Purchases**[1]
  - 832 MW Western Area Power Administration (WAPA) Hydro Contracts
  - 341 MW Other Firm Power Contracts
- **159 MW of utility behind the meter nameplate generation (includes solar)**

* Electrical generating resources expected to be in service by the summer of 2025.
[1] Capacity reserves are provided by the Firm Power provider

For the Need-Year of 2040 (summer), the Nebraska utilities have about 4,652 Megawatts (accredited rating) of new electrical generation being evaluated in various stages of the planning process. Additionally, 414 Megawatts (accredited) of generation has been placed in service since 06/01/24.

	Renewable	Conventional	Total
Committed	73 (441) (NPPD Wind, Solar) (LES Wind, Storage) (Hastings Solar)	1,324 (1,334) (OPPD RICE, CT, NG Conversion) (LES CT) (MEAN DFO)	1,397 (1,775)
Planned	328 (650) (NPPD Storage) (OPPD Solar+Storage) (GI Solar)	1,243 (1,517) (NPPD CT, RICE)	1,571 (2,167)
Studied	834 (2,539) (OPPD Solar, Wind) (NPPD Solar, Wind) (MEAN Solar, Wind)	850 (1,060) (OPPD CT) (LES CT)	1,684 (3,599)
Total	**1,235 (3,630)**	**3,417 (3,911)**	**4,652 (7,541)**

Unit ratings in accredited MW (Nameplate MW ratings in brackets)

Commissioned since 06/01/24	
Renewable	30 (Behind the Meter solar – MEAN, Grand Island, Hastings, NPPD)
Conventional	442 (528) (OPPD Turtle Creek) 2025 rating

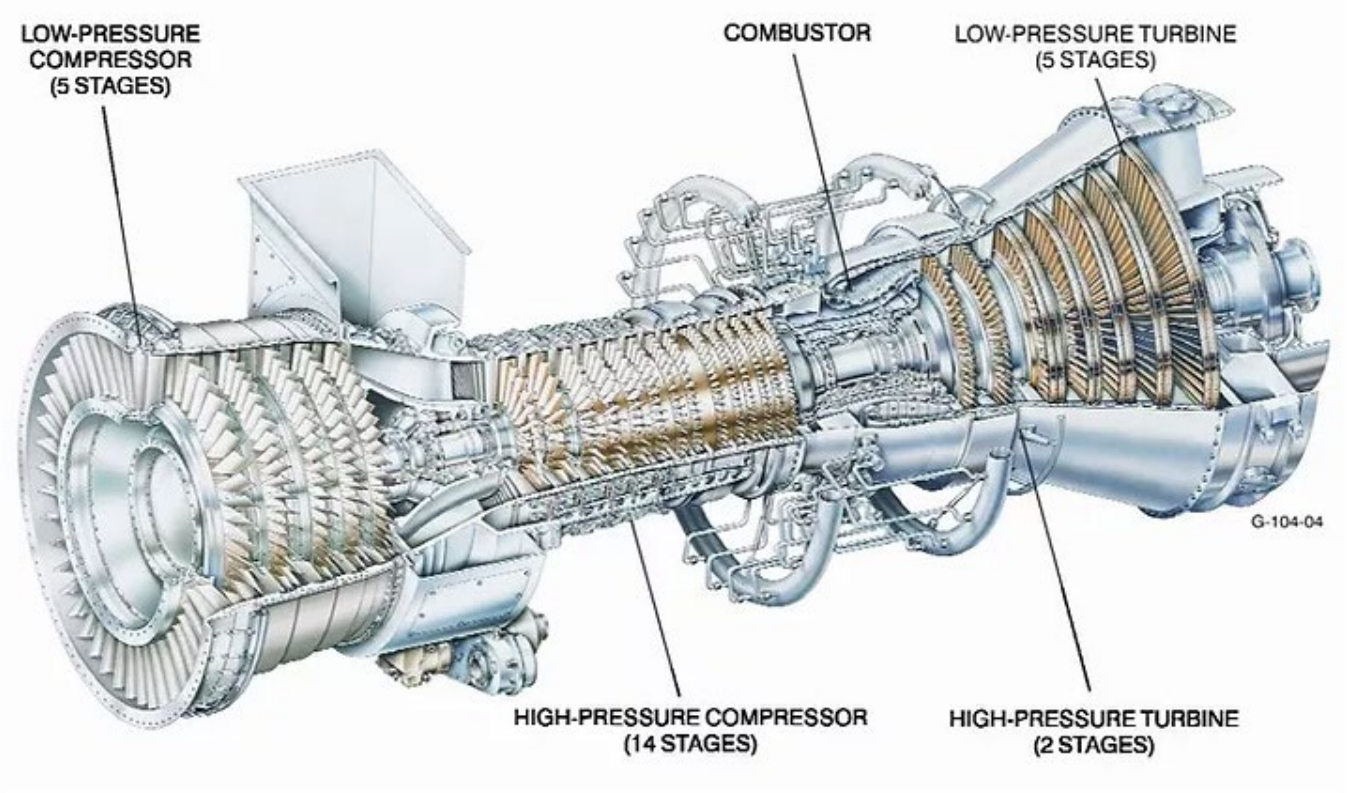
Terry Bundy Generation Station South Power Block Expansion Project

Existing space for additional expansion with Frame or Reciprocating Engine options.

Existing slots for two LM6000 Aero CT units. Approximately 100MW total.

Existing site provides a significant advantage when it comes to one crucial component of this near-term resource plan…time.

GE LM6000 Combustion Turbine Overview



LPC - Low pressure compressor (5 stages) with a 2.4 : 1 compression ratio
HPC - High pressure compressor (14 stages) with a 12 :1 compression ration
Combustion chamber (**Combustor**)
HPT - High pressure turbine (2 stages)
LPT - Low pressure turbine (5 stages)

Source: https://www.okansacli.com/post/inside-a-ge-lm6000-gas-turbine

Major Contracts

- **Generator Step Up Transformer Design, Review, and Procurement**
- **Air Dispersion Modeling & Permit**
- **115kV Circuit Breakers**
- **Combustion Turbine Procurement**
- **Engineering Design**

Landfill Gas Project

Location:
Lincoln, Nebraska

Commercial:
January 1, 2014

Fuel Type:
Landfill Gas (Bluff Road Landfill)

Total Plant Capacity:
4.8 MW

The City of Lincoln is pursuing a project to convert the methane from the Bluff Road Landfill into pipeline quality gas. LES is in the process of determining how to repower the units.

Electric Power Research Institute (EPRI): Generation Technology Options

Dispatchable

- Natural Gas Combined Cycle
- Natural Gas Combined Cycle with Carbon Capture and Storage
- Pulverized Coal
- Pulverized Coal with Carbon Capture and Storage
- Combustion Turbine
- Reciprocating Internal Combustion Engine
- Nuclear
- Small Modular Reactor (nuclear)
- Biomass
- Biomass with Carbon Capture and Storage
- Hydrogen Fired Aeroderivative Combustion Turbine
- Hydrogen Fired Combined Cycle

Non-Dispatchable

- Onshore Wind
- Offshore Wind
- Solar Photovoltaic
- Solar Photovoltaic plus Storage

Data sourced from EPRI Generation Technology Options: 2024, Program on Technology Innovation (3002029428)

Electric Power Research Institute (EPRI): Technology Radar Online Tool, Advanced Power Generation

Product

- Geothermal Energy
- Heliostat Power Plant
- Floating Wind Turbine
- Agrivoltaics

Prototype

- Superhot Rock Geothermal
- Marine Current Turbine
- Hydrogen Fuel Assembly
- Algal Biofuels
- Point Absorber Wave Energy Converter
- Airborne Wind Energy (AWE)

Concept

- Geologic Hydrogen
- Space-Based Solar Power (SBSP)

https://epritechradar.epri.com/?pg=home