MODELING, ASSUMPTIONS & SCENARIOS

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Informational Update

AGENDA

- INPUTS & ASSUMPTIONS INTRODUCTION
- SERVICE TERRITORY
- ELECTRIC LOAD FORECAST
- GENERATION PERFORMANCE
- PORTFOLIO OPTIONS

INPUTS & ASSUMPTIONS
INTRODUCTION

PROPOSED MODELING PROCESS

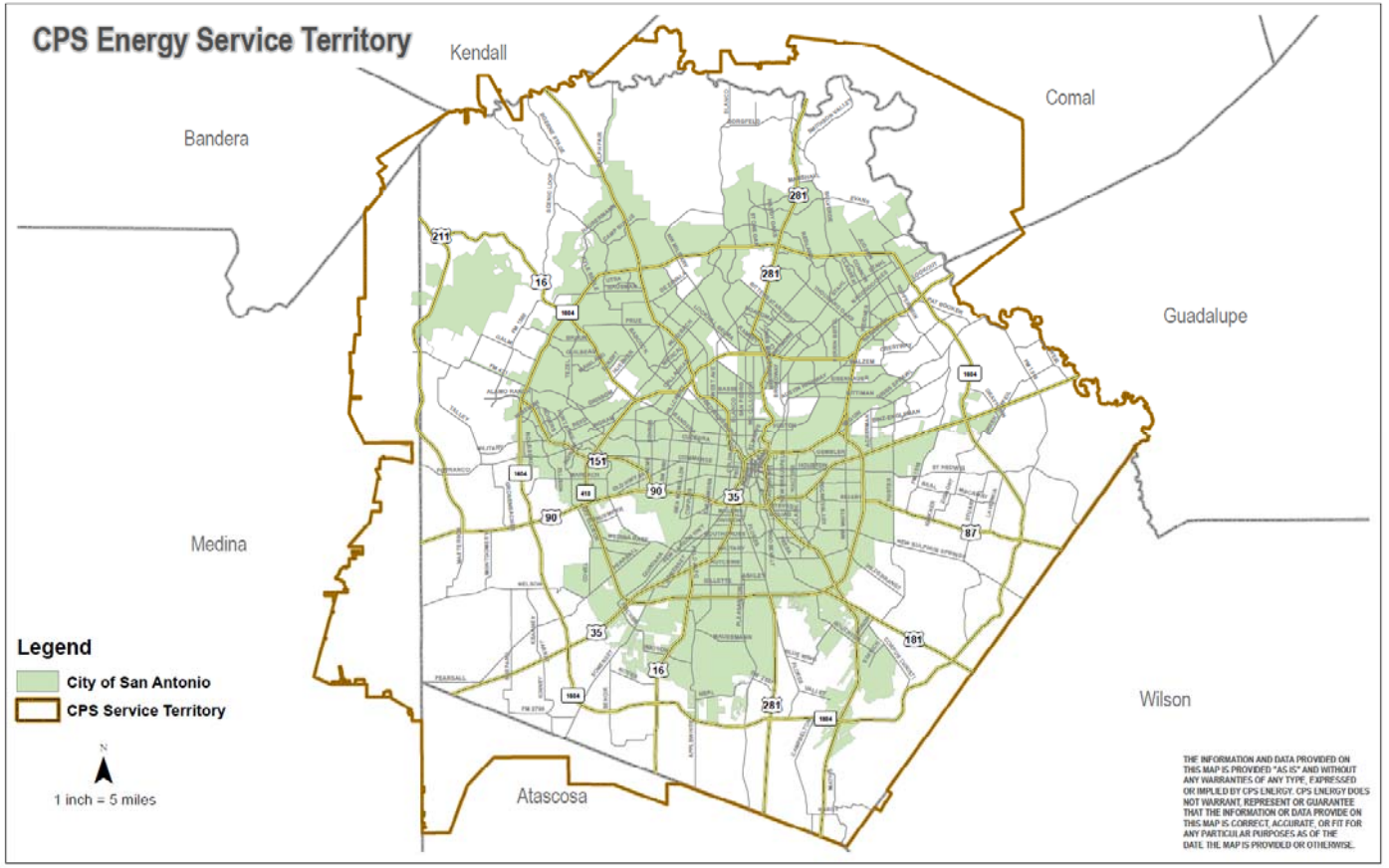
- Assumptions
  - Customer usage, Energy Efficiency, Generation cost and performance, generation additions, generation retirement schedule, fuel prices, market prices, financial assumptions, etc.
- Modeling
  - Each portfolio to be run through our production cost model over a 25-year forecast horizon and compared to a baseline portfolio
  - Uncertainty analysis included
  - Favorable projects to be run through our financial model to assess financial metrics and bill impact
- Points of Consideration
  - Affordability
  - Reliability/Resiliency
  - Environmental Responsibility
  - Workforce Impacts
  - Risk

SERVICE TERRITORY

CPS ENERGY SERVICE TERRITORY

CPS Energy Service Territory is within the San Antonio Metropolitan Statistical Area.

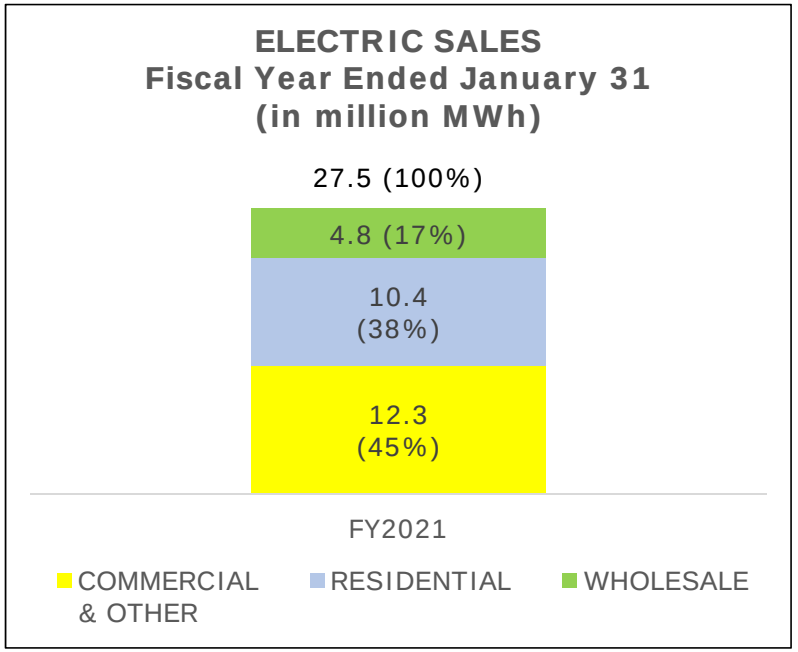
- The majority of CPS Energy service territory is aligned with Bexar County.
- It includes portions of in the surrounding counties of Atascosa, Bandera, Comal, Guadalupe, Kendall, Medina, & Wilson.



ELECTRIC LOAD FORECAST

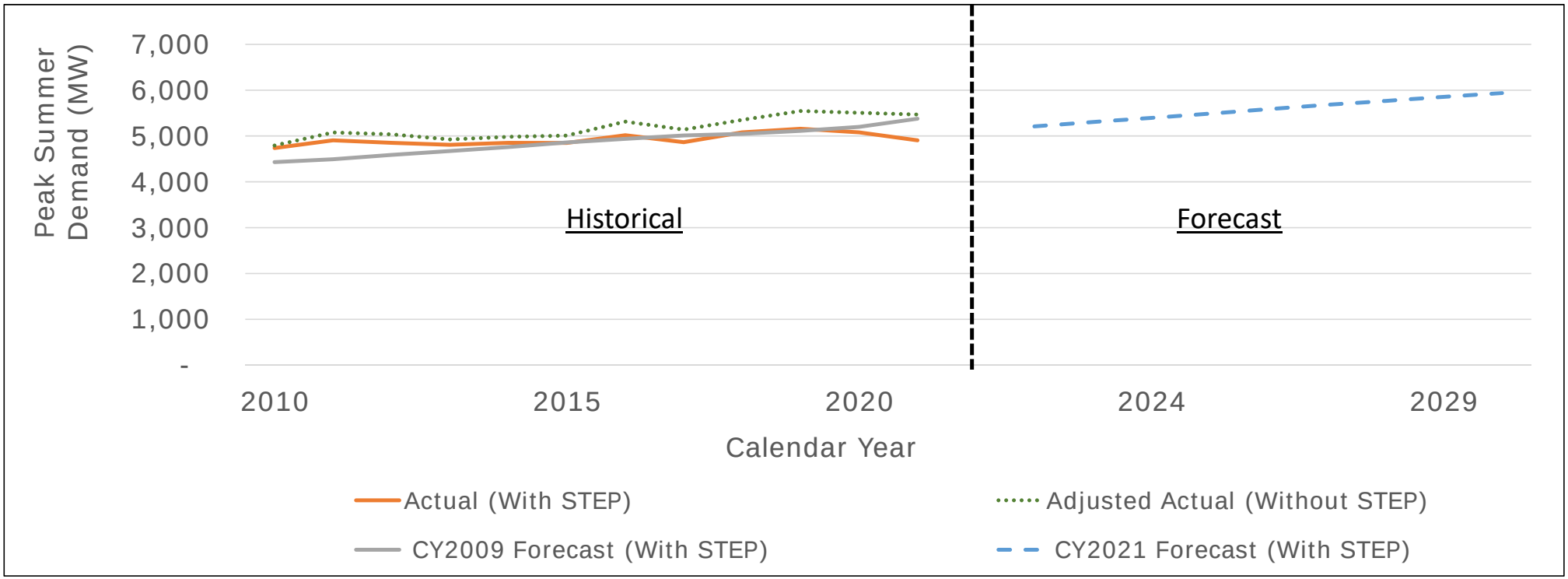
LOAD FORECAST
PURPOSE

- Forecast electric retail sales (MWh) for revenue planning
- Forecast peak demand (MW) for power generation long-range capacity planning
- 25-year, hourly forecast using regression model
- Industry leading model with expert technical & analytical support



We install generation capacity to meet our community's obligations. Any excess generation is offered to the ERCOT wholesale market.

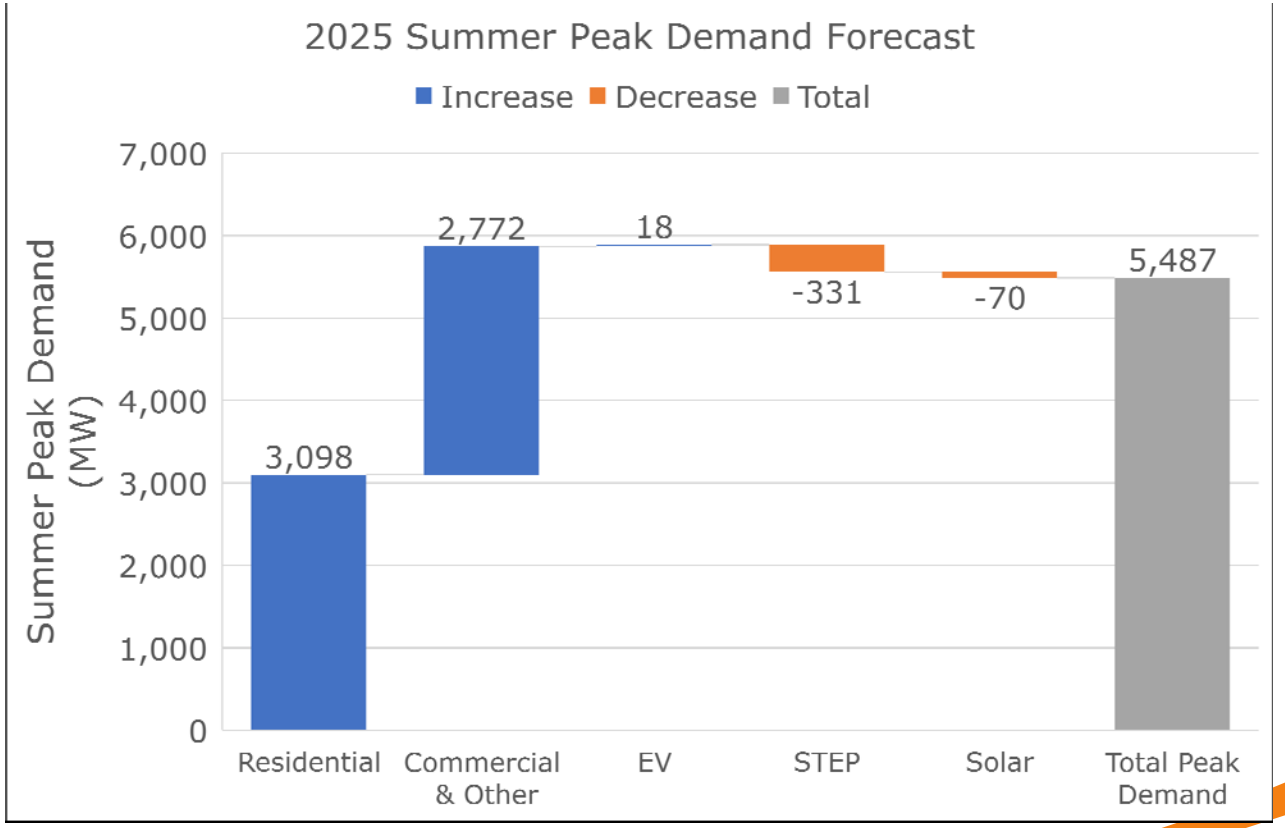
PEAK DEMAND (MW) TRENDS



Historical summer peak demand has been trending near the forecast. About 95 MW per year of customer growth is expected in the forecast.

PEAK DEMAND (MW)
KEY FORECAST INPUTS

- Key inputs: Differing customer classes, Electric Vehicles (EV), STEP, and Rooftop Solar
- Hourly forecast captures seasonal and time of day patterns
- Captures summer & winter peak capacity (MW) needs
- Uncertainty in peak capacity (MW) forecast is covered with reserve margin



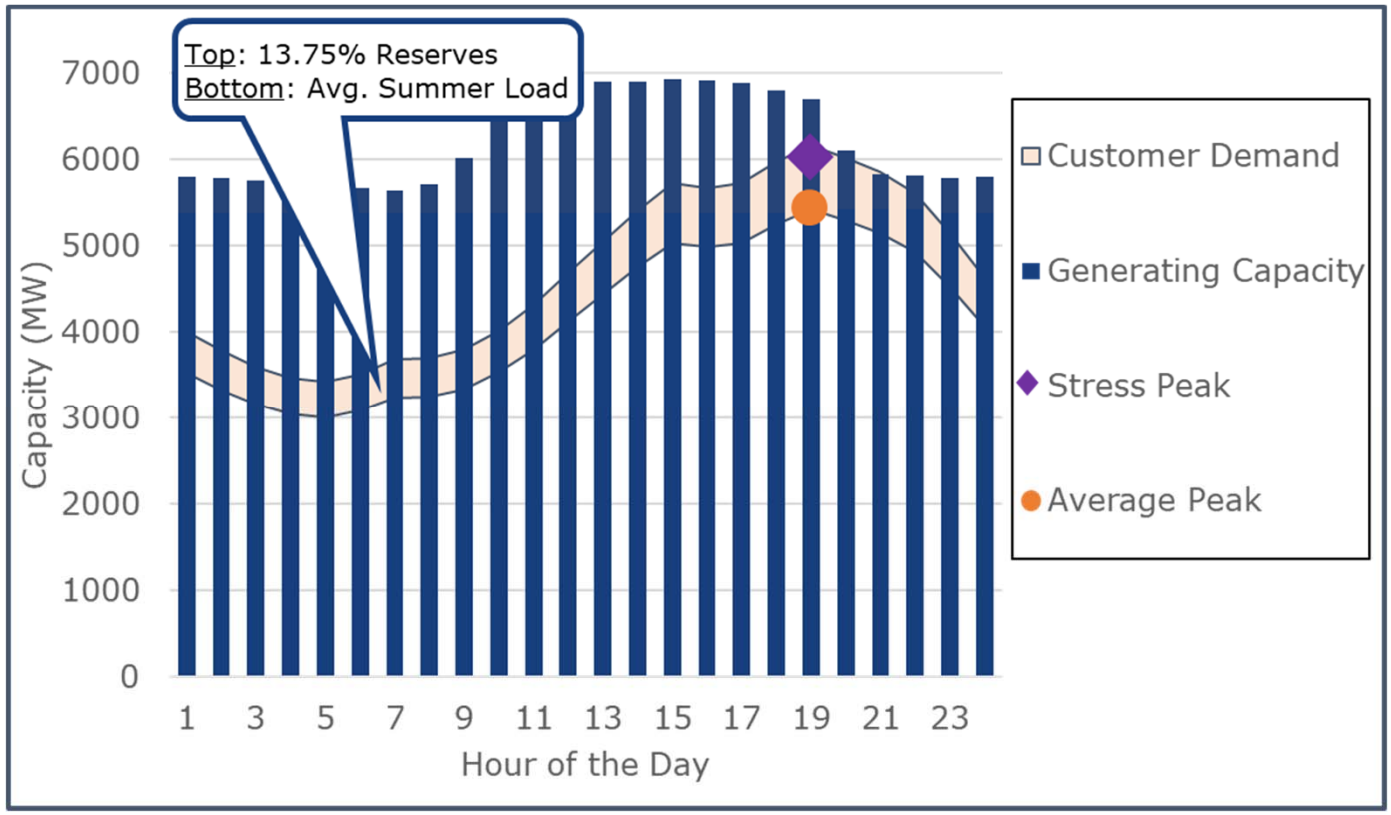
WEATHER

	Typical Weather	Extreme Weather
Deg F	Average 15 years	Max/Min 30+ years (1990+)
Month	Temperature	Temperature
January	32	17
February	30	9
March	81	21
April	93	99
May	98	103
June	100	107
July	100	106
August	102	109
September	98	111
October	94	99
November	89	89
December	30	16

- The forecast captures climate change trends using 15 years of historical data
- We track extreme weather trends & ensure our planned reserve margin can cover extremes

When evaluating system peak capacity needs, we consider differing weather conditions: Typical Weather and Extreme Weather.

SUMMER DAY
2025 PROJECTION – DEMAND & SUPPLY



2025 Summer Forecast:

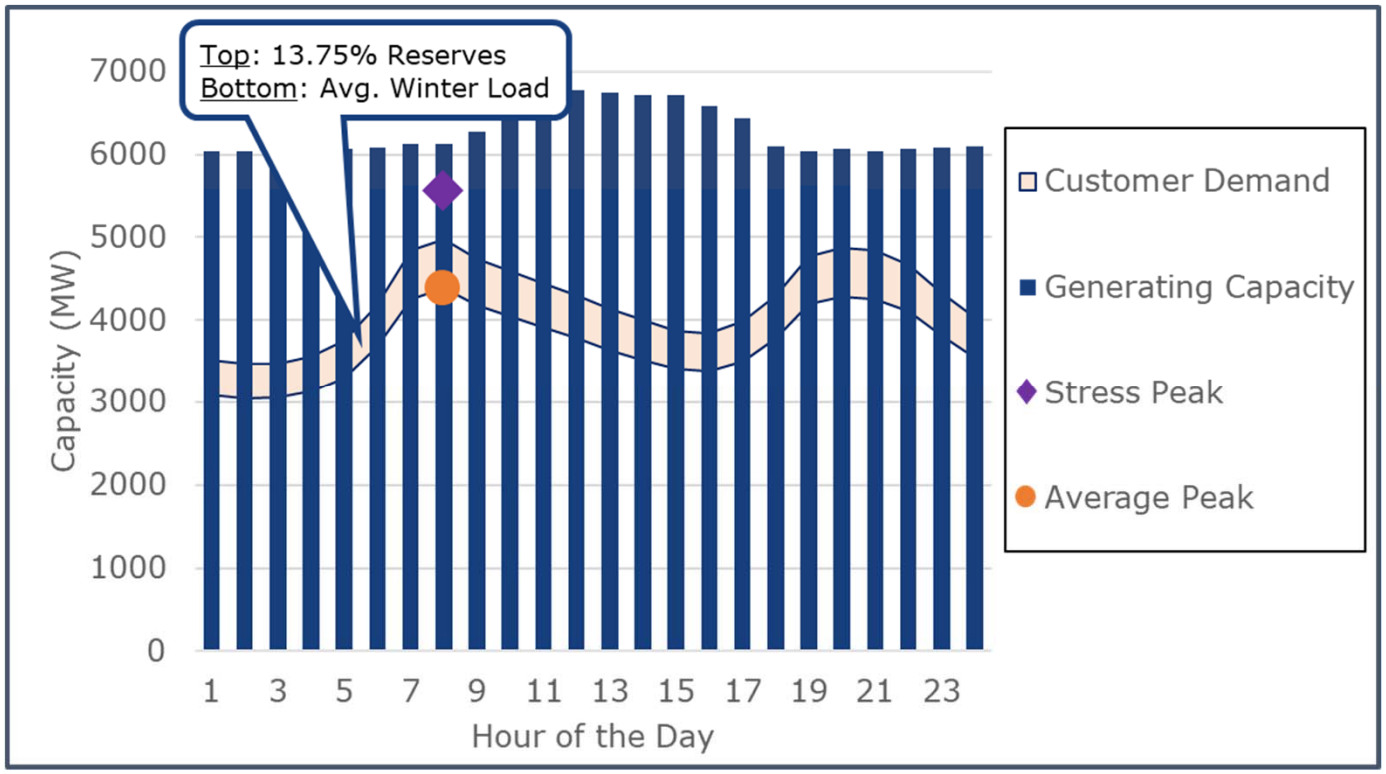
Demand:
- **Avg. Peak: 5,487 MW**
- **Stress Peak: 6,028 MW**

Supply:
- **Nuclear, Coal, Gas, & Storage: 100%**
- **Coastal Wind: 57%**
- **West Wind: 20%**
- **Solar: 50%**

Note: Updated to CY2021 forecast

All resources are utilized to meet summer peak demand.

WINTER DAY
2025 PROJECTION – DEMAND & SUPPLY



2025 Winter Forecast:

Demand:
- **Avg. Peak: 4,379MW**
- **Stress Peak: 5,555MW**

Supply:
- **Nuclear, Coal, Gas, & Storage: 100%**
- **Coastal Wind: 43%**
- **West Wind: 19%**
- **Solar: 0.9%**

Note: Updated to CY2021 forecast

All resources are utilized to meet extreme winter peak demand while average winter peak is less challenging.

ELECTRIC VEHICLES

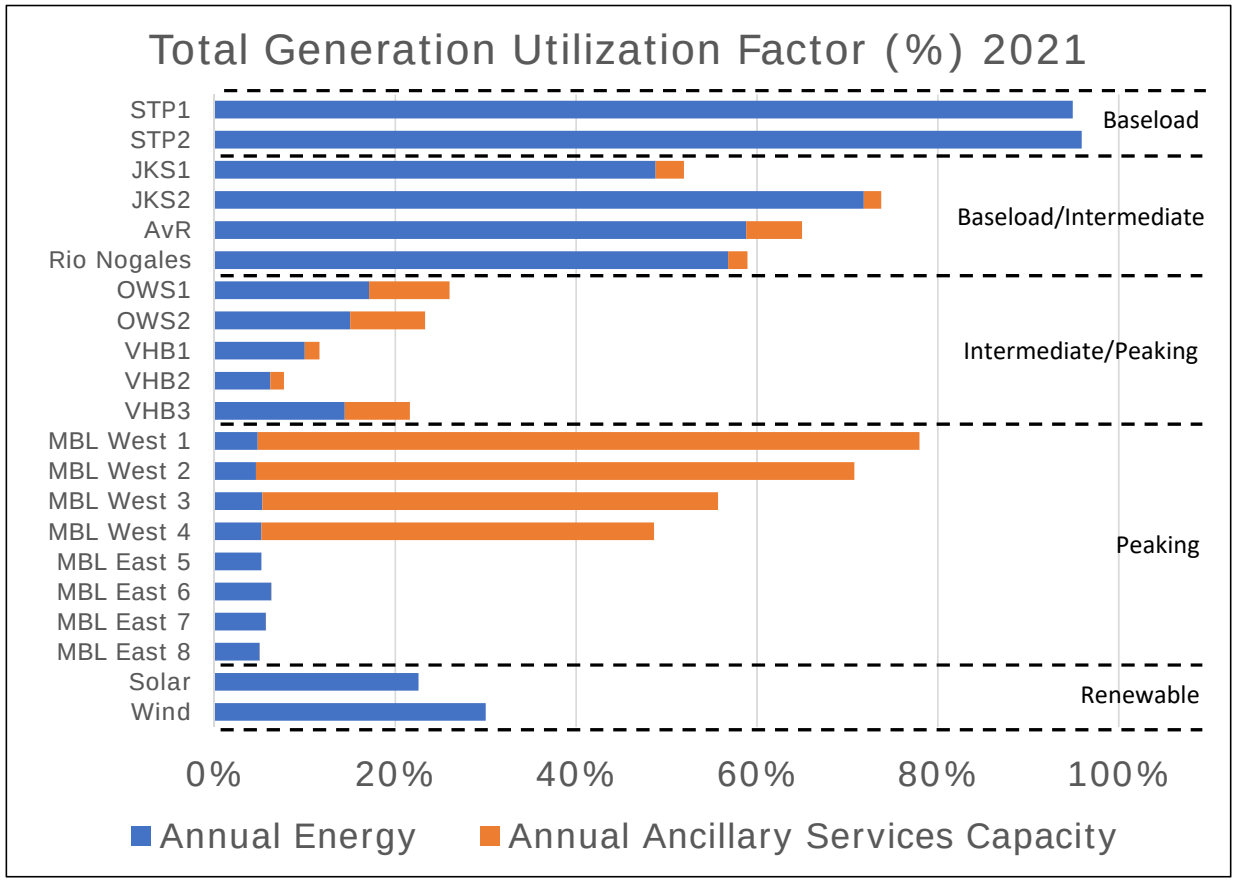
- Although EVs are currently a relatively small segment of the forecast, we are closely monitoring the growth rate
- EV forecast inputs:
  - Light Duty EV growth[1]
    - At home Time of Use (TOU) and non-TOU charging profiles
    - Workplace & public charging
  - Mid & Heavy EV growth
    - Some quantifiable growth per known commercial customers plans
    - More to be coming soon[2]: Trucks, Busses, other

Electric Vehicle (EV) adoption is captured in our forecast process.

1. Supplied by Electric Power Research Institute (EPRI)
2. Internally estimated from Alamo Area Council of Governments (AACOG) data & International Council of Clean Transportation data

GENERATION PERFORMANCE

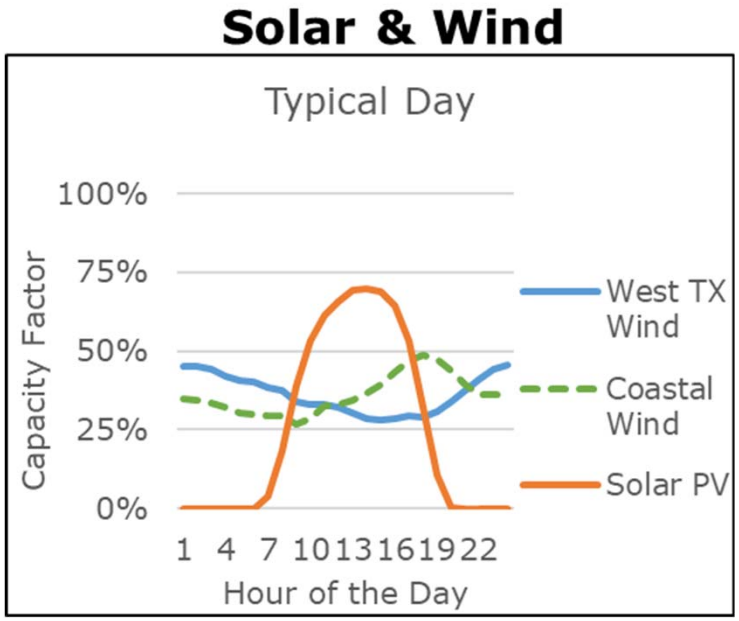
TOTAL GENERATION UTILIZATION 2021



<u>Total Generation Utilization Factor</u>: Percentage of total capacity used for energy and ancillary services

Adding Energy & Ancillary Services provides the total utilization picture.

RENEWABLE GENERATION
EMERGING OPPORTUNITIES



Type	Summer Peak Contribution (% of Max. Capacity)
Nuclear, Coal, Gas, & Storage	100%
West Wind	20%
Coastal Wind	57%
Solar	50%
Landfill Gas	76%

Type	Total (MW)	Total Summer (MW)
Wind	944.1	339.6
Solar	550.6	275.5
Storage	10.0	10.0
Landfill Gas	13.8	10.5
	1519	635.6

- Average peak contribution percentages used for long-range planning.
- Daily weather forecasts used for next-day wind and solar generation predictions.
- Real-time weather conditions determine actual generation available

Our long-term and short-term planning processes incorporate the unique operating profiles for renewable resources.

PORTFOLIO OPTIONS

PORTFOLIO MODELING*
POTENTIAL RETIREMENT DATES

Unit	MW	2022	2023	2024	2025	2026	2027	2028	2029	2030
South Texas 1	517									
South Texas 2	512									
Spruce 1	560									
Spruce 2	785									
Arthur Von Rosenberg	518									
Rio Nogales	777									
Sommers 1	420									
Sommers 2	410									
Braunig 1	217									
Braunig 2	230									
Braunig 3	412									
Milton Lee Peaking 1-8	376									

* Possible Spruce 2 gas conversion & all retirement dates are preliminary & for discussion purposes only.

Over 3,000 MWs of new generation will be required to meet customer needs by 2030.

PORTFOLIO MODELING*
PROPOSED STARTING POINT

Possible Retirements:

- o Braunig 1: Mar 2025
- o Braunig 2: Mar 2025
- o Braunig 3: Mar 2025
- o Sommers 1: Mar 2027
- o Spruce 1: Dec 2028
- o Sommers 2: Mar 2029

Planned Additions:

- o Solar: 2024 to 2025
- o Storage: 2024
- o Firming: 2022
- o Sommers 1 replacement
- o Spruce 1 replacement
- o Sommers 2 replacement
- o Load growth capacity

Other:

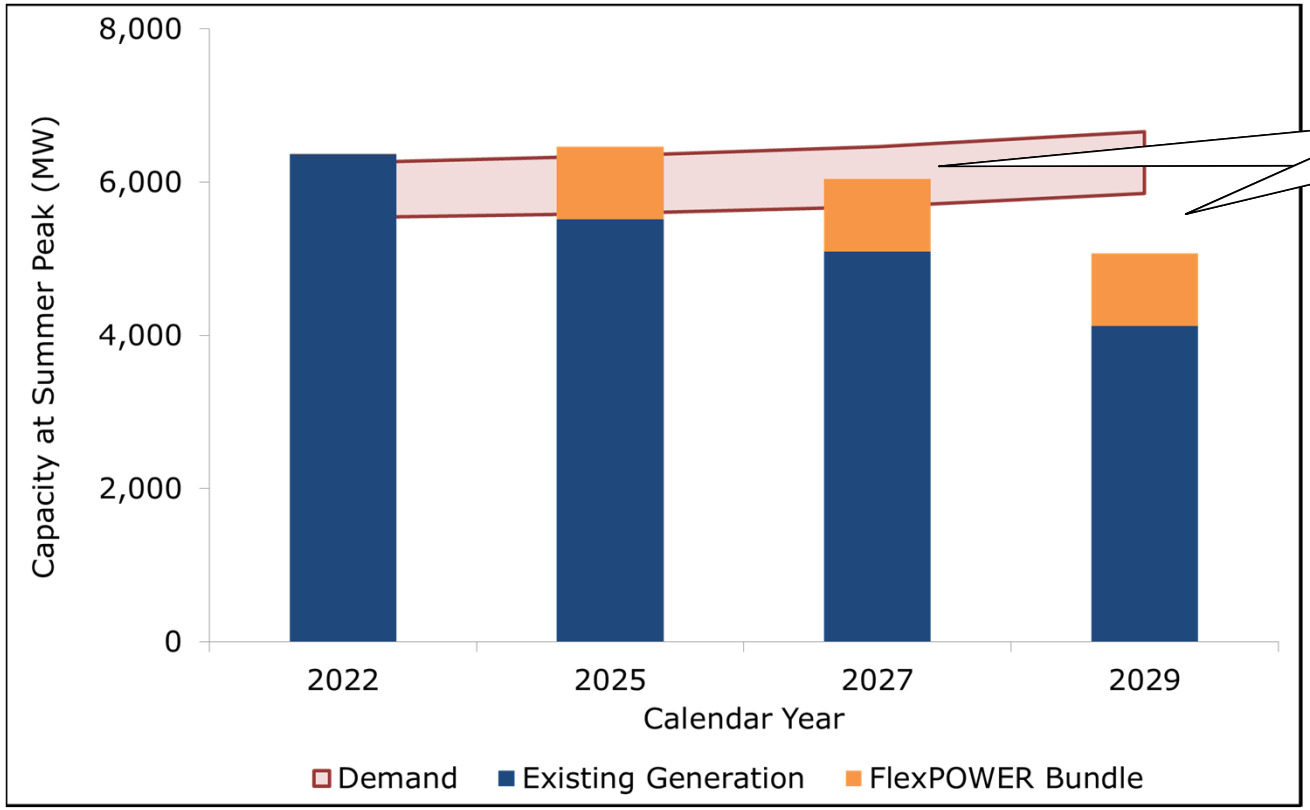
- o Possible conversion of Spruce 2 from coal to gas: Dec 2027
- o Potential inclusion of Geothermal, Geo-mechanical Pumped Storage

* Possible Spruce 2 gas conversion & all retirement dates are preliminary & for discussion purposes only.
* Our power generation plan update will define the resource types to use for the additions highlighted in grey.

We will work with RAC, CAC, & the community for feedback to model the scenarios and bring back the recommendations to the Board by December.

CAPACITY PLANNING

WE MUST CAREFULLY COVER S.A.'S NEEDS

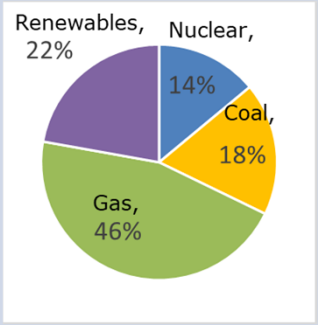
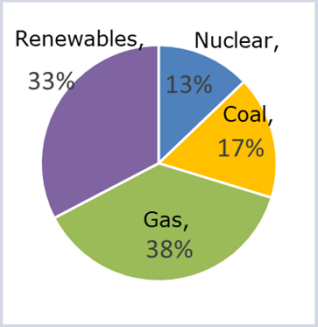
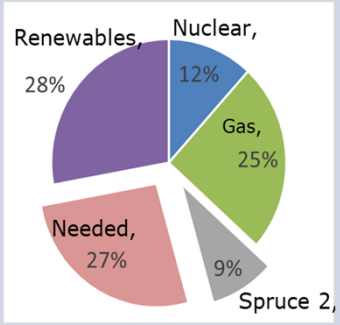


Planning is underway to fill capacity gaps.

Our generation planning strategy is to provide sufficient capacity to protect our customers from exposure to high market prices.

POWER GENERATION PORTFOLIO

POTENTIAL FUTURE LOOK

	2021	2025	2030
			
Nameplate Capacity:	7,350 MW	8,050 MW	TBD
Capacity at Peak:	6,377 MW	6,833 MW	TBD
Demand:	5,159 MW	5,487 MW	5,937 MW
	Current view	Key assumptions: • Add 900 MW of solar • Add 50 MW of battery storage • Add 500 MW of gas-fired firming capacity • Retire three Braunig gas steam units	Key assumptions: • Retire Sommers 1 • Retire Sommers 2 • Retire Spruce 1 • Retire or convert Spruce 2 Additional capacity needed to meet obligations

Our generation planning process will identify the types of resources to be added over the next several years.

PORTFOLIO MODELING

PROPOSED PORTFOLIO OPTIONS

Portfolio	Aspects
Renewable	• Wind, solar, & other • Storage
Natural Gas	• Combined cycle • Reciprocating internal combustion engine
Blended	• Economic maximum renewables: Wind, solar, & other • Economic storage • Natural Gas: Combined cycle & Reciprocating internal combustion engine

Notes:

1. Spruce 2 converted to gas in all of the above portfolios
2. Each portfolio assessed with and without “Save Now”.
3. Emerging technology assumptions to be included.

Capacity is needed to address customer growth and unit retirements (Sommers 1 & 2, Spruce 1).

APPENDIX

PEAK DEMAND (MW)
KEY FORECAST INPUTS

- Key inputs: Differing customer classes, Electric Vehicles (EV), STEP, and Rooftop Solar
- Hourly forecast captures seasonal and time of day patterns
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