

Los Alamos Power Resource Planning “Challenges and Opportunities”



Joint Board and
Council Meeting
September 17, 2019

ATTACHMENT A

AGENDA

- Integrated Resource Planning
- Resource Planning History
- Factors Considered in Integrated Resource Planning
- U.S. and Western Interconnection Electricity Market Perspectives (FTI Consulting Slides)
- How does the evolving Western Interconnect effect NM and LAC
- In Conclusion
- Glossary

Integrated Resource Planning

An **integrated resource plan**, or IRP, is a utility **plan** for meeting forecasted annual peak and energy demand, plus some established reserve margin, through a combination of supply-side and demand-side resources over a specified future period.

Current Resource Mix

- San Juan Generating Station (Coal), 36 MW (Exit 2022)
- Laramie River Station (Coal), 10 MW (2042)
- El Vado (Hydro), 9 MW Run-of-the-River
- Abiquiu (Hydro), 17 MW Run-of-the-River
- WAPA (Hydro), 1 MW
- Distributed Energy Resources
 - Utility Scale PV, 1 MW
 - Customers roof top solar, approx. 0.75 MW

Resource Planning History

- 1985 – 2015: IRP through the Electric Coordination Agreement (ECA)
- 2016 Board Direction for developing a Schedule and Integrated Implementation Plan for the Adopted Future Energy Resource Recommendations “IRP”
- LAC and DOE-LANL (Federal) Renewable Energy Goals Diverge
- 2017 Pace Global, a Siemens Corporation prepares IRP for LAC
key issues
 - Laboratory Contract
 - Small Modular Nuclear Reactor’s- Competitiveness
 - Most Economical way to meet 2040 Carbon Neutral Goal
 - Future Participation in our coal fired generation resources (SJGS, LRS)
 - How DPU can meet the requirements for reliable, economic operations inside PNM’s Balancing Area

New Resources Considered

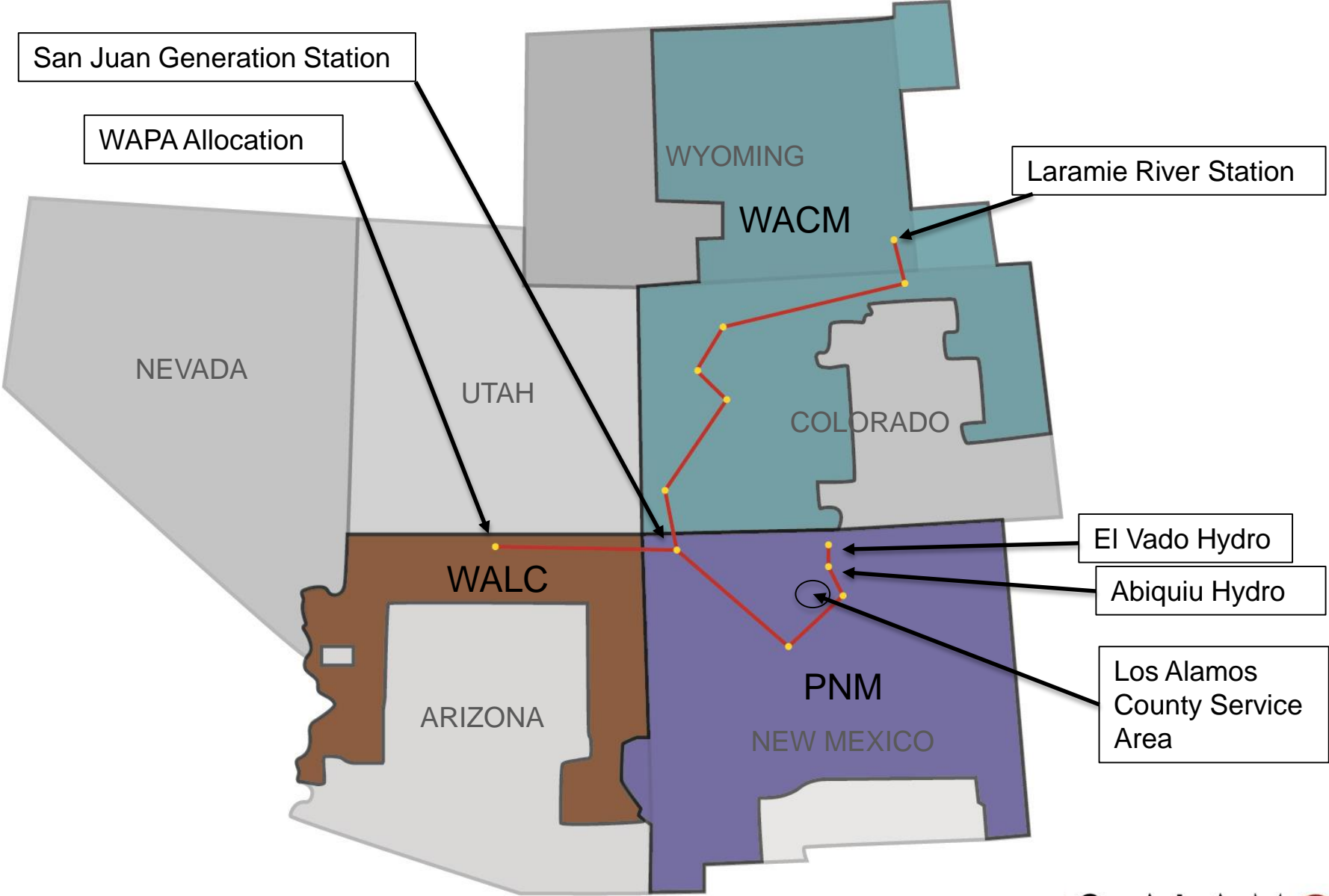
- 2008 Cochiti Hydro
- 2011 Caballo Hydro
- 2012 Horse Butte Wind
- 2015 Carbon Free Power Project
- 2016 Cove Fort Geothermal
- 2016 Solar with Vanadium Flow Battery Storage
- 2018 Laramie River Station swap for renewable energy
- 2018/2019 Pumped Storage
- 2018 Navajo Tribal Utility Authority (NTUA)-Solar Site
- 2019 Public Service Company of NM, Commercial Solar Garden
- 2019 Landfill 2nd MW solar PV
- 2019 Solar/Wind Firm Block Power, Around The Clock

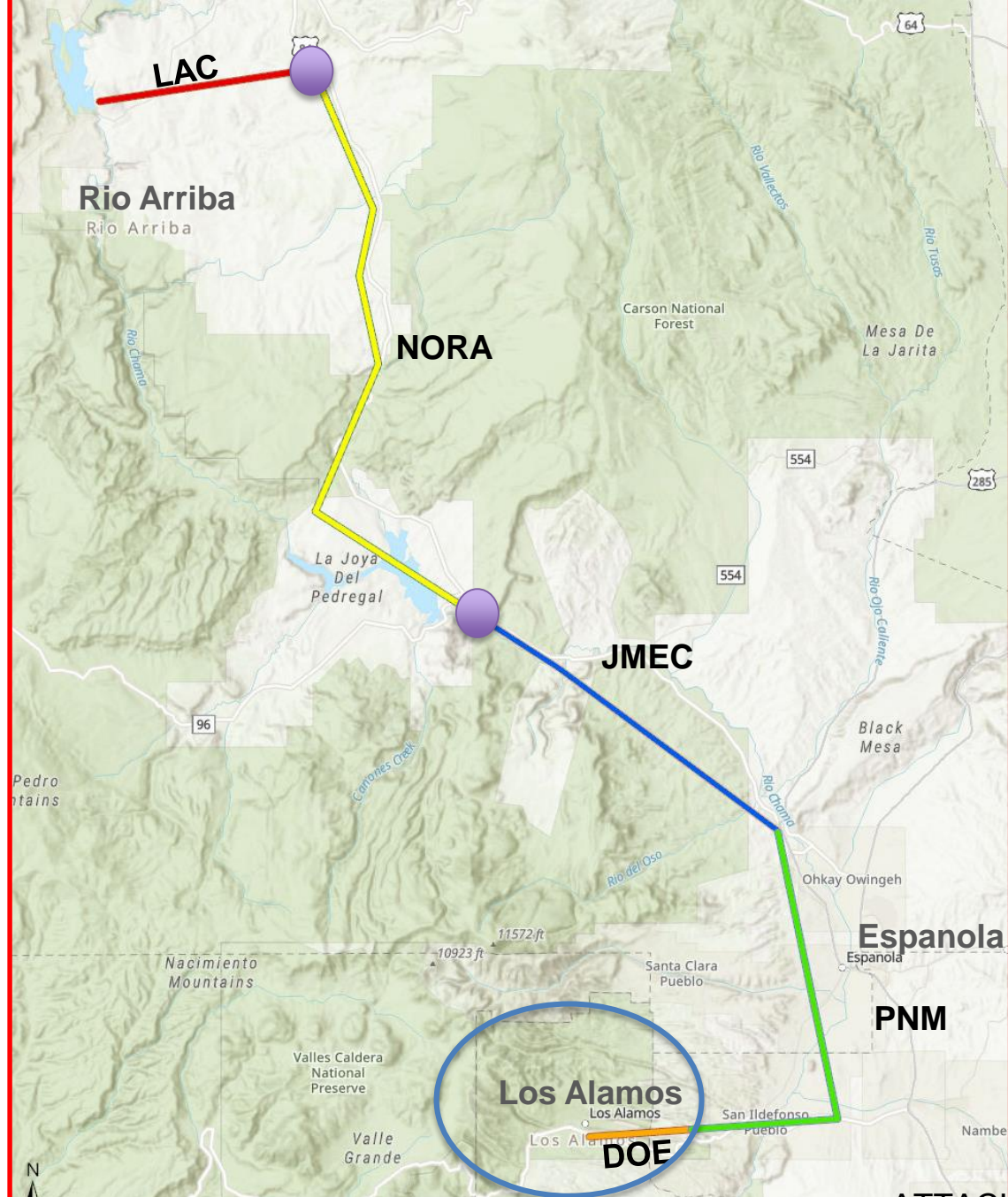
Factors Considered in Resource Planning

(Existing and New Resources)

- Levelized Cost of Energy (LCOE)
- Risk
- Environmental
- Operational (Transmission, weather dependency, controllable)
- LAC & DOE-NNSA, Electric Coordination Agreement
- Generation Resource Location (Balancing Area)
- Demand and Generation Profiles
- Evolving Markets in the West

Balancing Areas and the cost associated with delivering power from the generation source to the County.



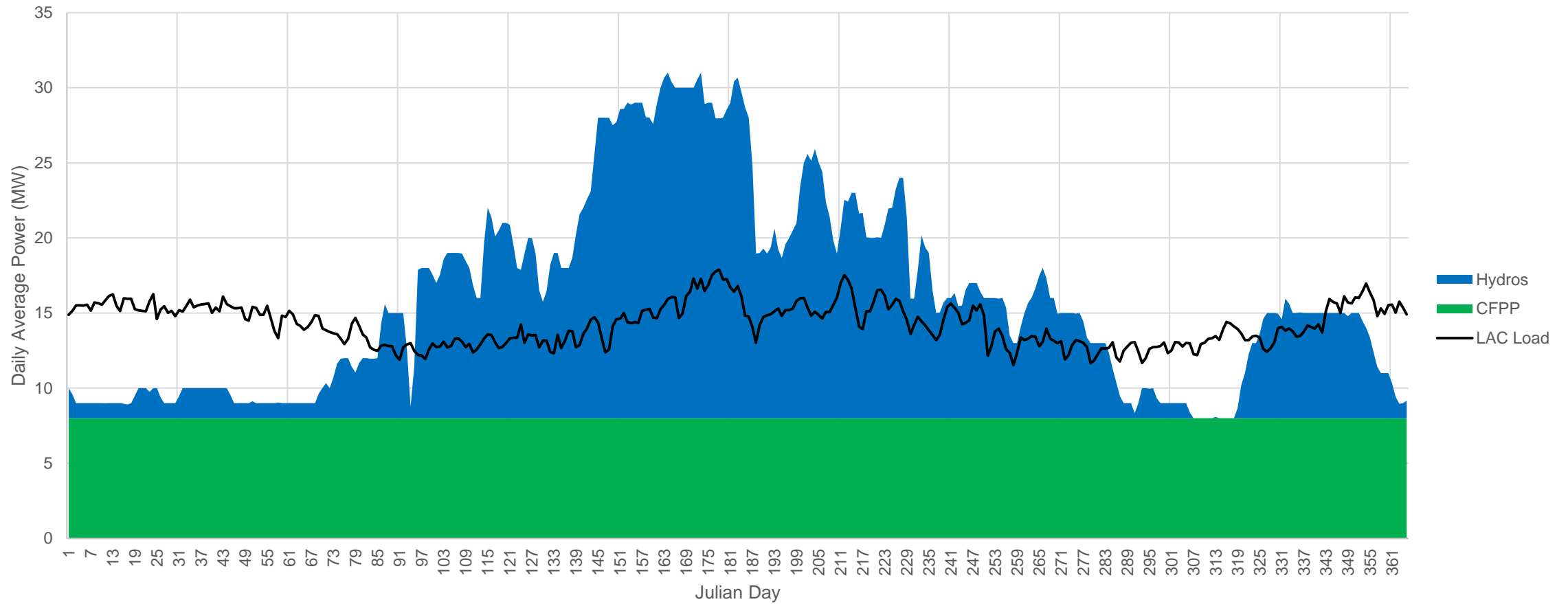


Pancaking Transmission Rates

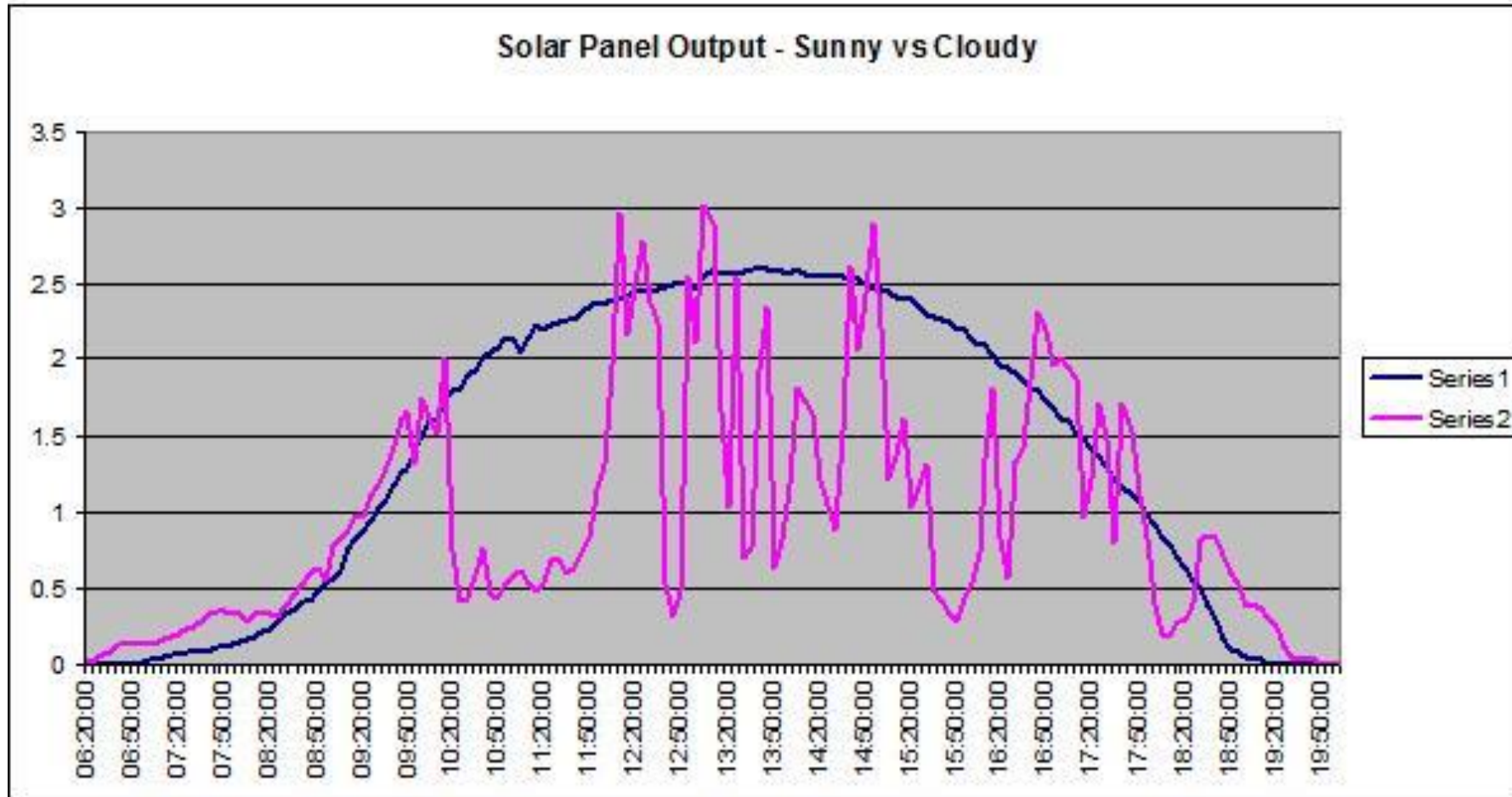
	NORA Electric Co-op Transmission	\$3.47/MWh
	TSGT Substation	\$0.50/MWh
	JMEC	\$2.00/MWh
	PNM	Approx. \$5.00/MWh
	DOE-NNSA	Approx. \$2.50/MWh

Example:
El Vado Trans. Cost \$13.47/MWh

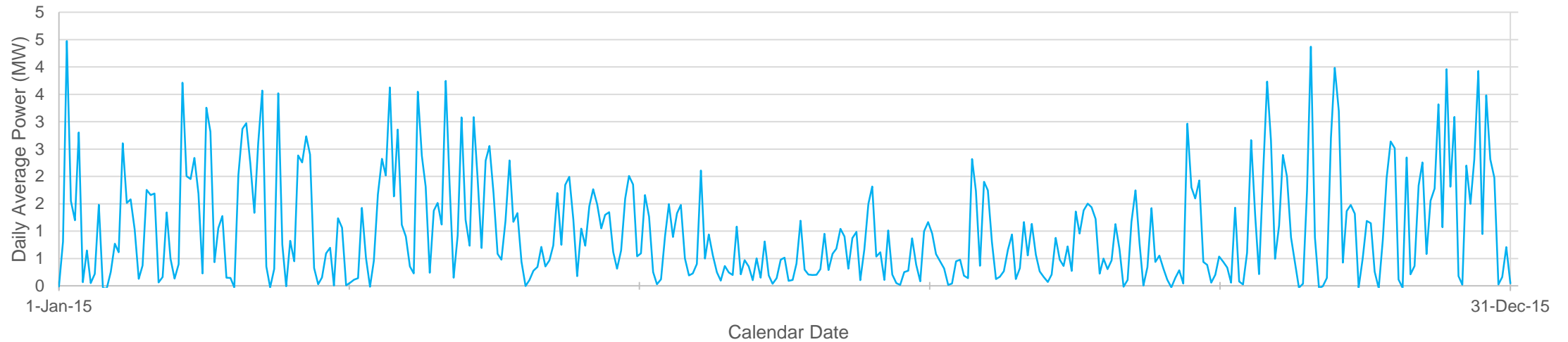
Example of LAC Annual Demand and Generation Profile



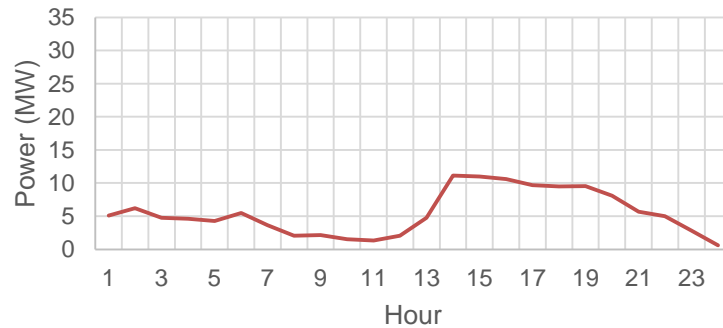
Intermittent Solar Resource Generation Profile



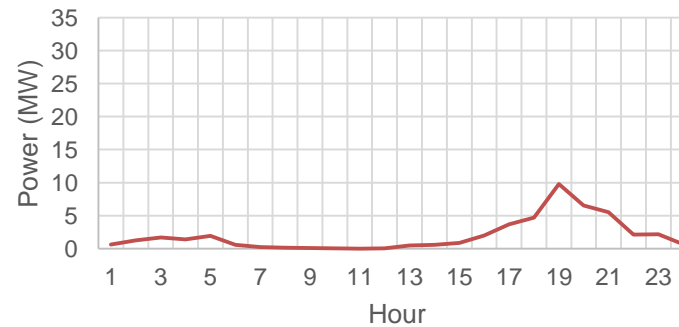
Intermittent Wind Resource Generation Profile



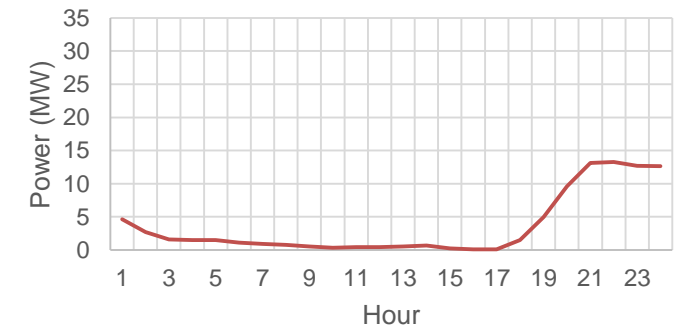
April 15



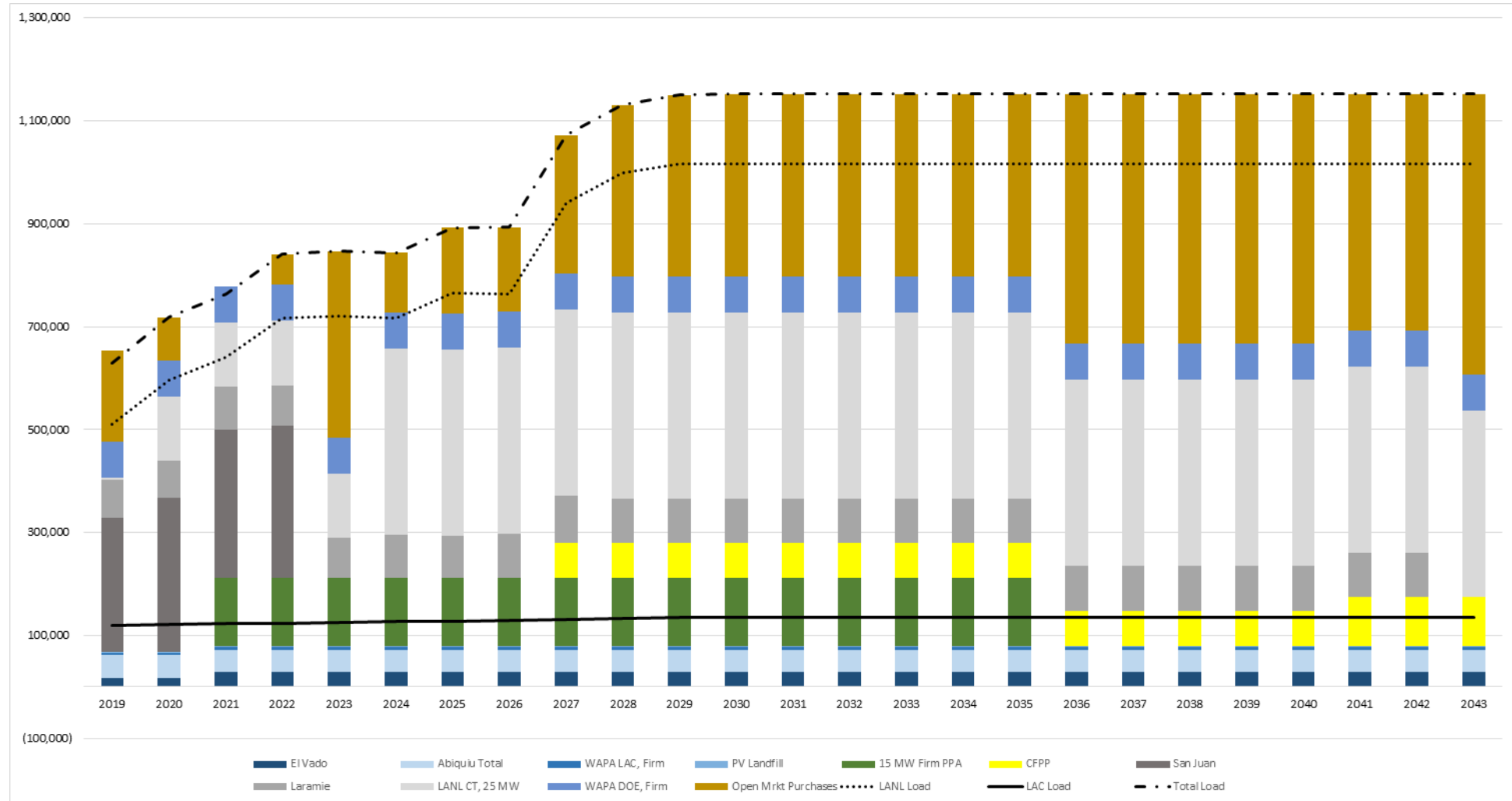
July 15



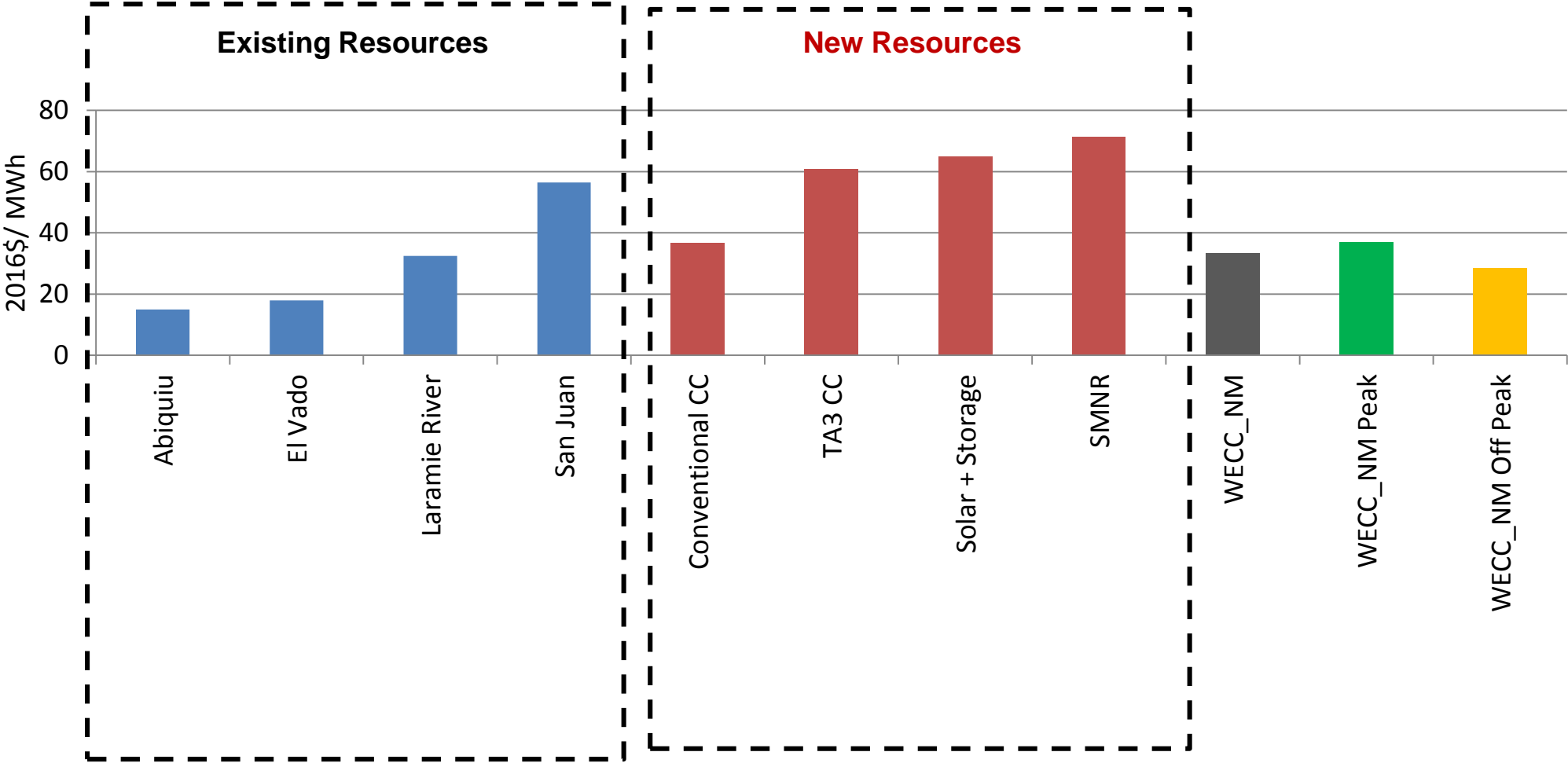
October 15



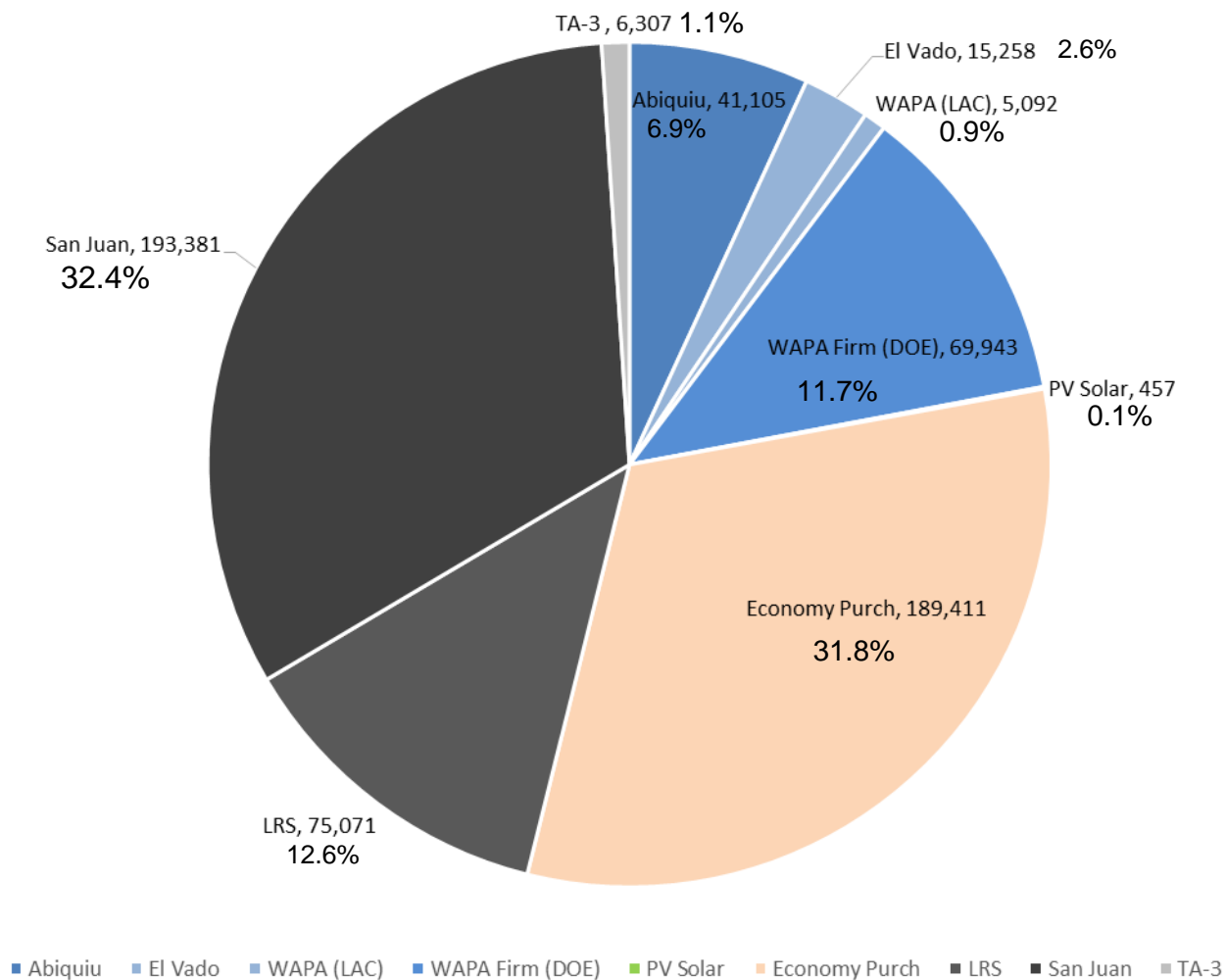
Future Load & Generation Option Mix



Levelized Cost of Energy of Existing and New Resources



2019 MWh Supplied by Resource



Fiscal Year	Mwhs	Total \$	Blended \$/Mwh
FY19	562,357.79	\$ 32,159,798.00	\$57.19
FY18	597,653.99	\$ 29,081,986.00	\$48.66
FY17	578,381.78	\$ 28,891,250.00	\$49.95
FY16	573,288.34	\$ 39,425,092.00	\$68.77
FY15	519,319.31	\$ 31,022,700.00	\$59.74
FY14	532,669.54	\$ 40,486,505.00	\$76.01
FY13	572,464.00	\$ 40,848,840.00	\$71.36
FY12	589,364.51	\$ 40,945,322.00	\$69.47
FY11	563,109.22	\$ 38,550,174.00	\$68.46
FY10	543,273.83	\$ 41,130,693.00	\$75.71
FY9	542,171.09	\$ 38,020,391.00	\$70.13
FY8	536,335.44	\$ 35,204,568.00	\$65.64
FY7	559,089.84	\$ 33,187,950.00	\$59.36
Total/Average	7,269,478.68	\$ 468,955,269.00	\$64.51

U.S. and Western Interconnection Electricity Market Perspectives

Fengrong Li
FTI Consulting



U.S. and Western Interconnection Electricity Market Perspectives

Presented to:
Los Alamos County Department of Public
Utilities Joint Board and Council Meeting

September 17, 2019



Agenda

1. National Power Market Outlook

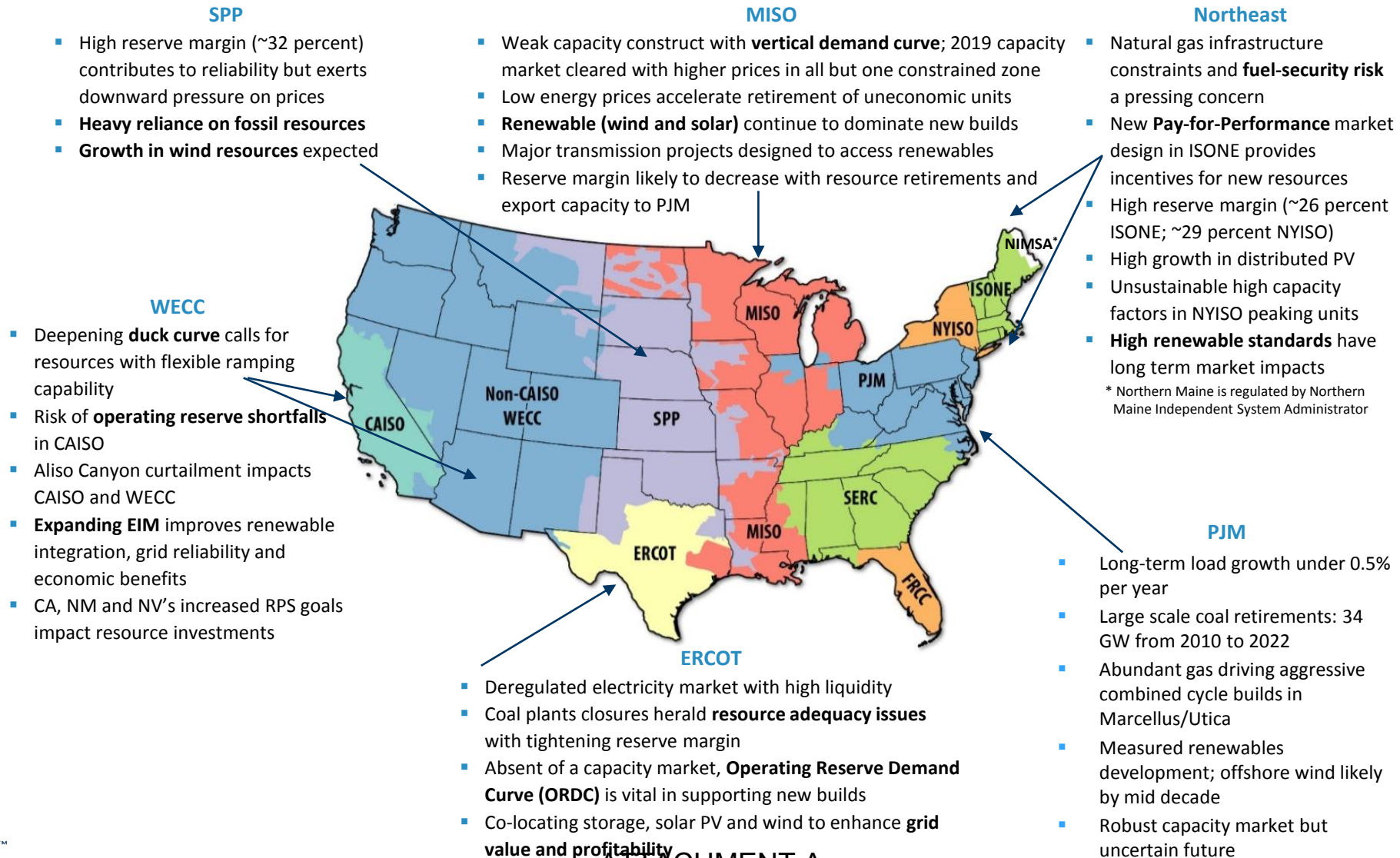
2. CAISO Market Snapshot

3. WECC Market Snapshot

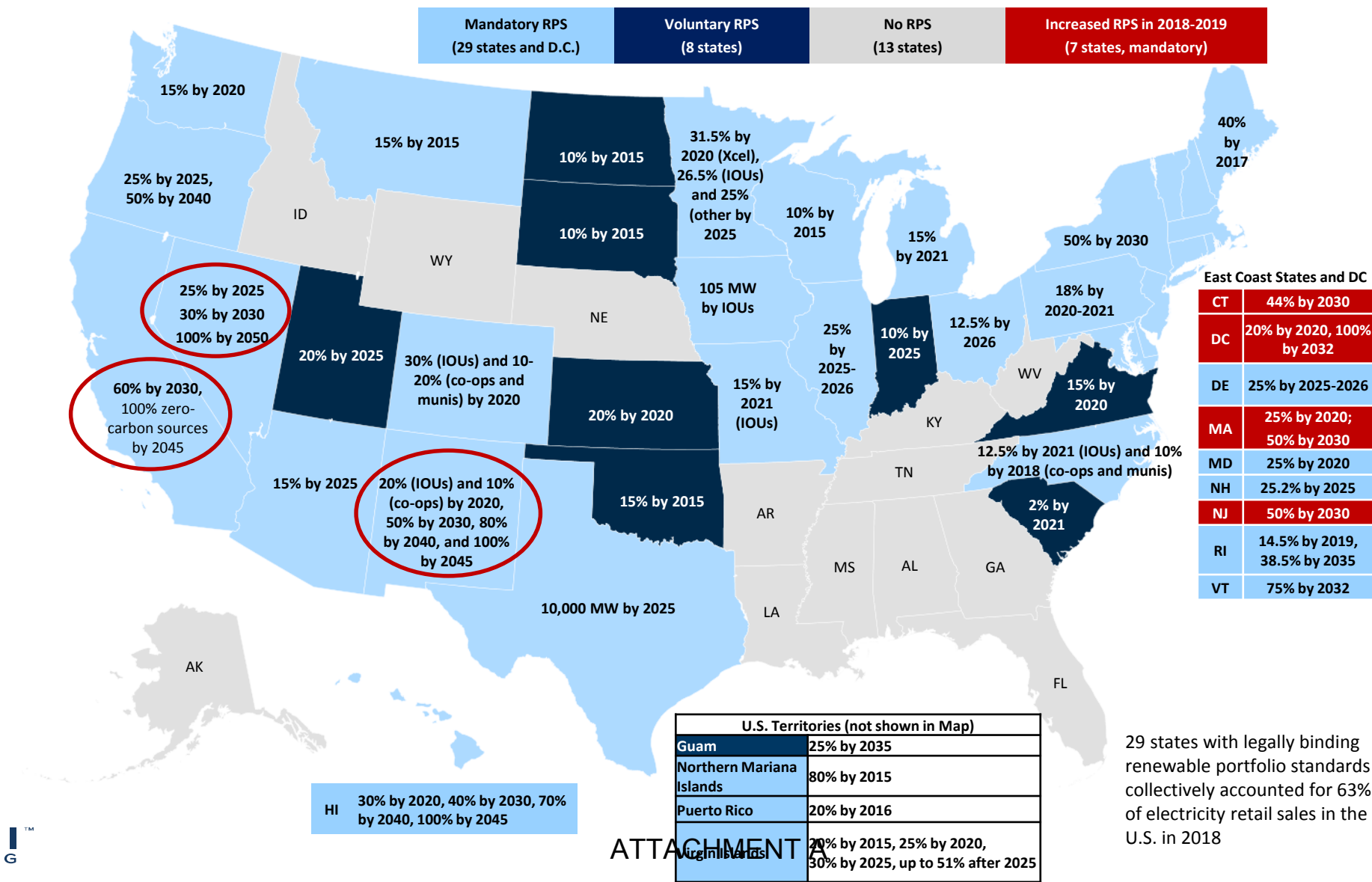
4. Western Energy Imbalance Market (EIM) Update

5. Glossary

Regional disparities raise different market issues

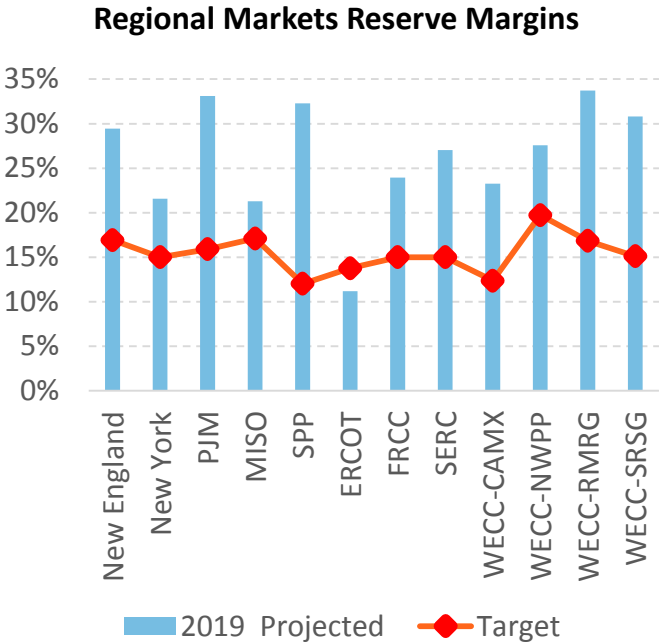


Renewables mandates have major impacts on future prices



Shifting trends in how demands are met with generation

U.S. power market expects overall healthy reserve margins, with most regions over-supplied, with the exception of ERCOT due to coal retirements.



Sources: NERC Long Term Reliability Assessment, FTI analysis

U.S. Power Market Outlook	
Demand	Grid-served electricity consumption reached plateau. Flat to low annual growth rate (~0.5 percent) expected with energy efficiency and shift to less energy-intensive economic growth.
DER	DER expected to more than double in the next five years, with key growth in CA, NJ, MA and NY.
Solar / Wind	Accelerated renewable portfolio standards with increasing goals, improved renewables cost & performance, and customer preference continue to drive renewables growth.
Storage	Favorable market, economic, and regulatory drivers along with qualifying Investment Tax Credits (ITC) provide impetus for significant growth in installed capacity and expansion in territory to markets like Puerto Rico, ERCOT, and the Northeast.
Natural Gas	Natural gas is the primary on peak fuel in majority markets. Gas generation essential to manage wind and solar variability. Large CC additions expected in vertically integrated utility regions and markets with large baseload resource retirements.
Coal	58 GW of coal retirements since 2013 16 GW to be retired by 2025, and most impacted states include TX, AZ, CO, NY, MN, and WA.
Nuclear	5 GW nuclear retirements since 2013. 12 GW to be retired by 2025, and most impacted states include CA, NY, and OH.



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CAISO Snapshot

Market overview

Modeled Hubs and Load Zones



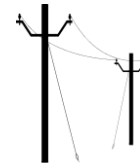
CAISO is the only ISO in the WECC region

Market Overview – 2018 Snapshot



Generation

- Total Installed Capacity: ~60 GW
- Installed Wind*: 6.5 GW
- Installed Utility-scale Solar*: 11.8 GW
- Installed renewables: 22 GW



Load & Reserve Margin

- Total Energy: 226 TWh
- Peak load: 46 GW
- 10-yr Forecast Load Growth: 0.49 percent per year
- Expected average reserve margin of 23.27 percent in WECC-CAMX, above the NERC reference target of 12.35 percent.



Market Prices

- High gas prices, seasonally high load and reduced hydro generation led to high prices in 2018.
- SP 15 Hub Average Energy in 2019*
DA: \$36.21/MWh RT: \$34.77/MWh
- NP 15 Hub Average Energy in 2019*
DA: \$37.09/MWh RT: \$35.56/MWh

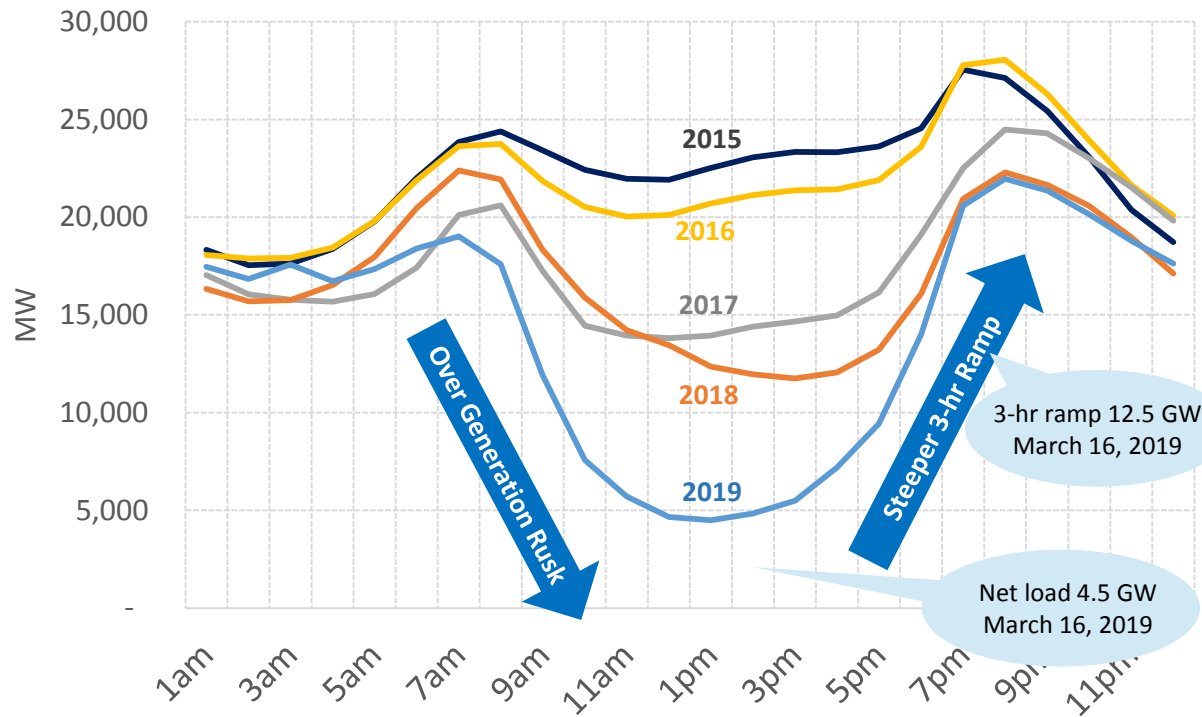
* Note: as of June 13, 2019

Key market trends and drivers

Factors	Description
Duck Curve	<ul style="list-style-type: none"> ■ Increasing penetration of solar resources exacerbates the Duck Curve - characterized by high solar output during times of lower demand and daylight hours, followed by sharp reduction in output coinciding with increasing demand in the evening ■ Creates high demand on peaking and load-following generation capacity ■ Operational constraints limit Aliso Canyon output, increasing ramping requirements
Renewables	<ul style="list-style-type: none"> ■ SB 100 accelerates California's RPS to 60 percent by 2030, and 100 percent by 2045 ■ ~34 percent of retail sales from RPS-eligible resources in 2018 > goal of 33 percent by 2020 ■ 1.7 GW/y of utility-scale solar added over the past three years – expected to continue ■ 300 MW/y of wind added over the past three years – expected to continue
Gas and Nuclear	<ul style="list-style-type: none"> ■ 1.4 GW of gas in advanced stages and 3.0 GW in all stages to be built by 2022 ■ 6.2 GW of gas-fired power plants are slated to retire by 2022 ■ Last nuclear plant – Diablo Canyon Power Plant (2.3 GW) – will retire by 2025
Price Volatility	<ul style="list-style-type: none"> ■ High renewables penetration leads to changes in the diurnal price profiles where prices bottom in the middle of the day driven by strong solar production ■ High delivered gas prices coupled with Operational Flow Order (OFO) at SoCal Citygate, frequent location of marginal resources drive up system marginal prices

Increasing over generation and steeper ramping in CAISO

CAISO Actual Net Loads on March 16th during 2015-2019



CAISO March 16 th Actual Net Load (MW)		
Year	5pm - 8pm Ramp	1pm Net Load
2019	12,519	4,504
2018	9,063	12,356
2017	8,343	13,937
2016	6,155	20,697
2015	3,495	22,525

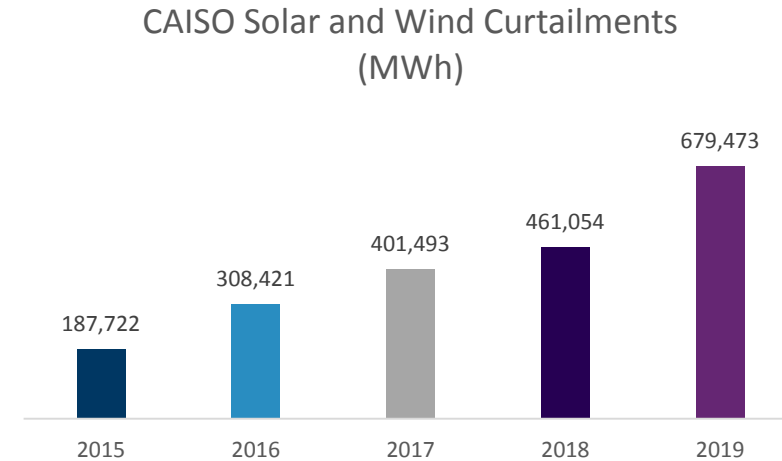
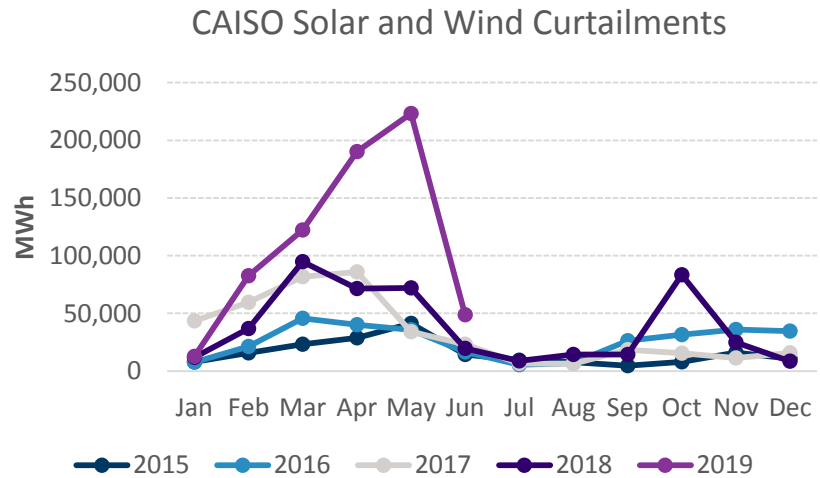
- **Changes in net load** (demand minus variable generation) demonstrate the need for flexible resources that can ramp down in the morning and up in the evening
- **Deepening net load and steeper afternoon-to-evening ramp** lead to increasing renewables curtailment and resource challenges

Note: March 16th is analyzed as a typical spring day because seasonally low electricity demand makes the impact of solar and wind on net load more evident.

Source: CAISO data, FTI analysis

CAISO faces challenges of solar and wind oversupply

CAISO Wind and Solar Curtailments (2015-2019)

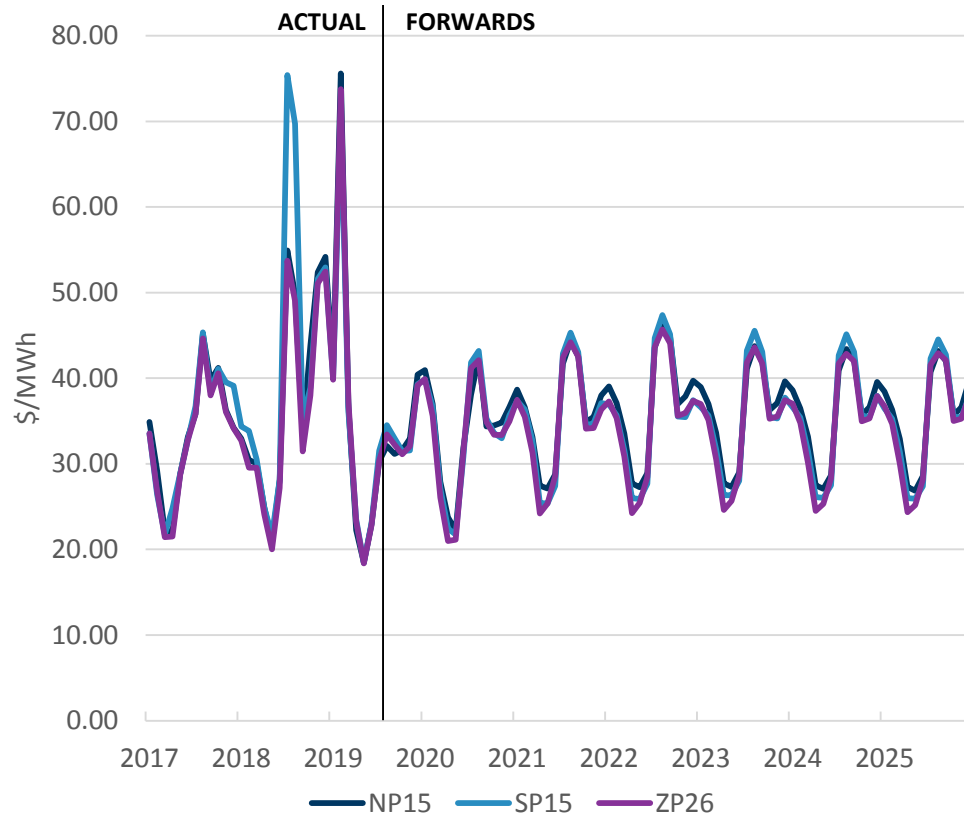


Note: 2019 data are for the period of January – June.

- **Curtailments** due to oversupply are on the rise as California integrates increasing amounts of variable renewable energy (VER) into the grid, with economic curtailments accounting for majority of renewable curtailments in CAISO
- **Deepening net load** are expected to intensify renewable curtailments, which could result in a downward spiral of overbuilding renewables to meet the 60 percent RPS mandate
- **Mitigating solutions** include energy storage, demand response, one-way and two-way charging EVs, flexible generation resources, time of use (TOU) rates, and Western EIM expansion, etc.

CAISO summer prices expected to remain high

Select CAISO Hubs Day Ahead Monthly Prices and Forward Curves



- **High prices** during peak summer months, driven by high temperatures, gas plant retirements and gas supply constraints in Southern California, and import constraints into CAISO.
- **Shoulder season prices** remain subdued across the region due to strong renewable output and anticipated return to normalcy of hydro conditions. Summer-peaking seasonality forecast to be greater than in most other regions.
- **SP 15 price** reached \$980/MWh at hour 20 on July 24 2018, driven by high gas prices and low renewables production.
- **High prices in February 2019** were primarily driven by high gas prices.
- **Robust renewables growth** further pushes down the net load, and put pressure on day time power prices.

Note: CAISO settlement prices during January 1, 2017 – July 31, 2019; traded forward curves as of August 9, 2019



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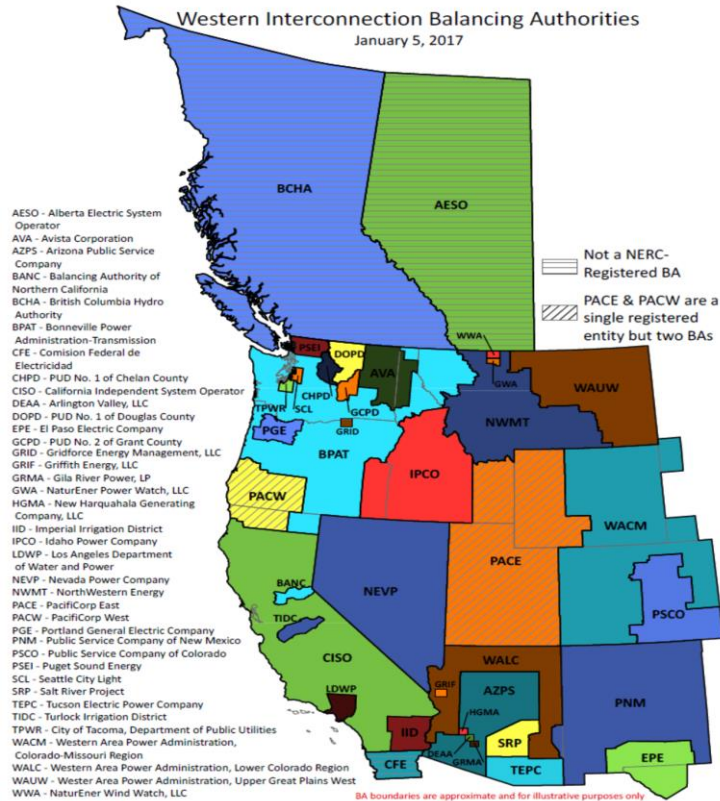
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WECC Snapshot Market overview

Modeled Hubs and Load Zones



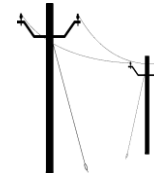
WECC is divided into 38 distinct Balancing Authority areas

Market Overview – 2018 Snapshot



Generation

- Total installed capacity: ~280 GW
- Installed Wind: 24 GW
- Installed Utility-scale Solar: ~20 GW (as of Feb 2019)



Load & Reserve Margin

- Total Energy: 880 TWh (2018)
- Peak load: 161 GW (2018)
- 10-yr Forecast Load Growth: 0.9 percent per annum
- 2018 reserve margin of 23.5 percent, above the NERC reference target of 15.4 percent.



Market Prices

- High summer temperatures across the west in 2018, weak hydro conditions (54 percent of normal year), and gas supply constraints in Southern California led to overall higher prices
- Mid-C Hub Energy 2019 Average*
DA: \$27.32/MWh
- Mead Hub Energy 2019 Average*
DA: \$31.50/MWh

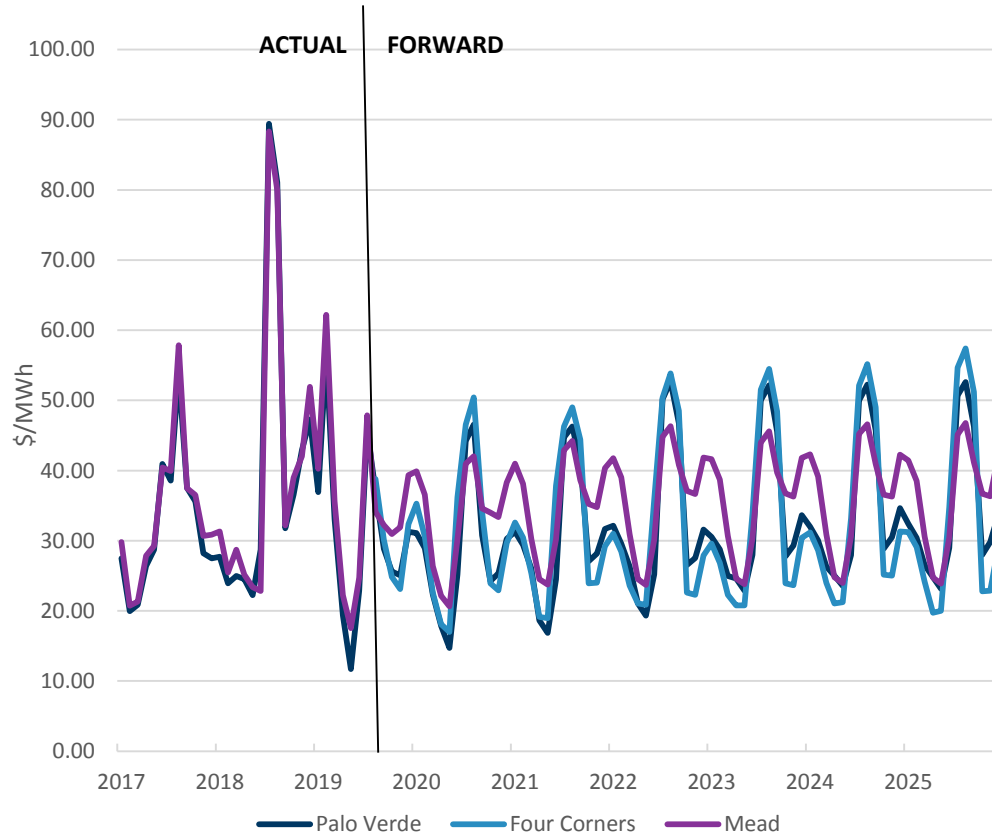
* Note: as of June 13, 2019

Key market trends and drivers

Factors	Description
Increased RPS Mandates	<ul style="list-style-type: none"> ■ New Mexico RPS of 100 percent by 2045 ■ Nevada RPS of 100 percent by 2050 ■ Follows SB 100 that accelerates California's RPS to 60% by 2030 and 100% by 2045
Renewables	<ul style="list-style-type: none"> ■ Strong solar irradiance in California and the Southeast, and wind resources across entire WECC ■ Aggressive retirement schedule for existing gas and coal units; high regulatory and policy hurdles for all new generation capacity other than renewables or energy storage in most states <ul style="list-style-type: none"> ○ Wind capacity increases by ~9 GW by 2026, with most additions in the Pacific Northwest ○ Solar capacity increases by ~18 GW by 2026, with most additions in California
Coal and Nuclear	<ul style="list-style-type: none"> ■ High regulatory and policy hurdles for all new generation capacity other than renewables or energy storage in most states ■ System reserve margins are expected to become increasingly tight through 2026, driven by baseload coal and nuclear retirements (~9 GW of coal and ~2 GW of nuclear by 2026) ■ New Mexico capacity shortages, with coal retirements in the PNM Balancing Authority area not yet offset with new resource procurement. PNM has announced plans to make up the capacity shortfall through increased imports, battery storage projects, and renewables.
Ramping Requirements	<ul style="list-style-type: none"> ■ Higher system ramping requirements create investment opportunity for storage, EV, demand response, and flexible generation resources to mitigate reliability risks

WECC summer prices expected to remain high

Select WECC Hubs Day Ahead Monthly Prices – FTI Reference Case



Note: Historical prices during January 1, 2017 – July 31, 2019; traded forward curves as of August 9, 2019

- **High prices** during peak summer months, driven by coal retirements in New Mexico and Arizona, and expected short-term increase in scarcity pricing in California impacting neighboring areas – especially Nevada, Arizona, and New Mexico.
- **Pending PNM joining the EIM** expected to increase market opportunities for New Mexico generation resources to access different peak loads in the Western area.
- **Robust renewables growth** with ~9 GW of wind and ~18 GW of solar capacity to come online across WECC by 2026.



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Expanding EIM improves renewable integration & grid reliability

EIM Expansion: 9 Entities to 17 Entities by 2022

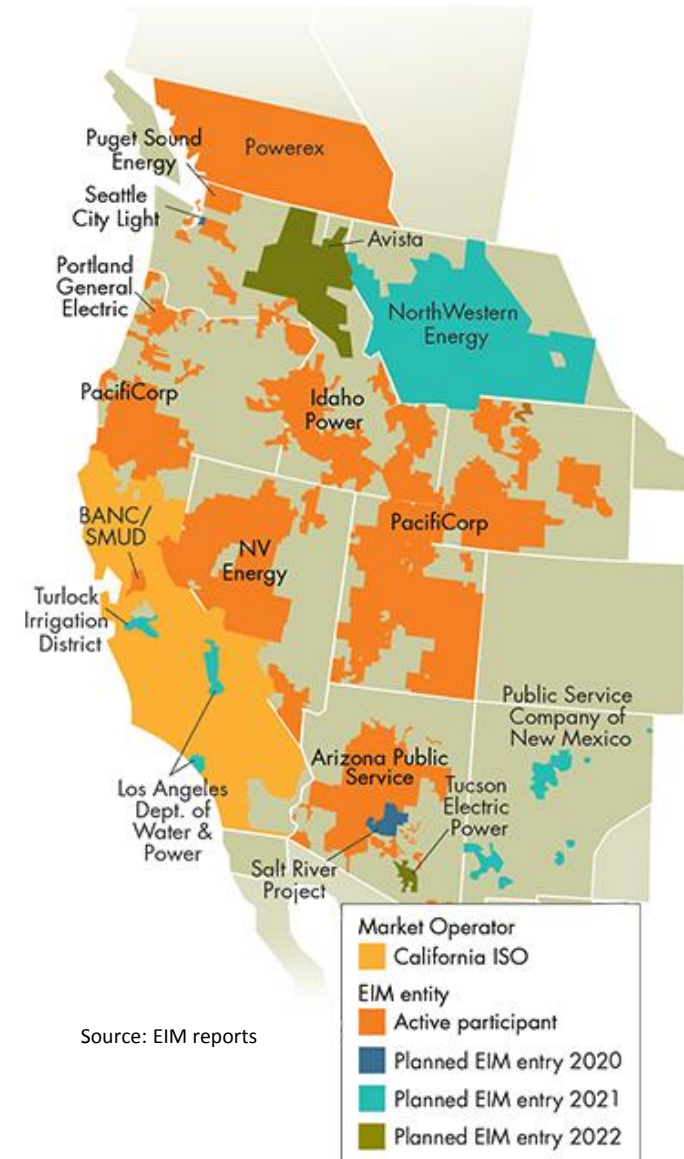
Current Participants:

- California ISO
- PacifiCorp
- NV Energy
- Arizona Public Service
- Puget Sound
- Portland General Electric
- Powerex
- Idaho Power Company
- Balancing Authority of Northern California (BANC)/Sacramento Municipal Utility District (SMUD)

Upcoming Participants:

- Salt River Project (2020)
- Seattle City Light (2020)
- Los Angeles Department of Water & Power (LADWP) (2021)
- Public Service Company of New Mexico (PNM) (2021)**
- NorthWestern Energy (2021)
- Turlock Irrigation District (2021)
- Avista (2022)
- Tucson Electric Power (2022)

- Energy Imbalance Market (EIM) expansion** with planned new entrants from Montana, New Mexico, Arizona, and California could contribute to improved integration of renewables
- Diversity of load and resource** across a wide geographic area helps to manage increasing flexible capacity needs and renewable curtailment in CAISO
- Allow participants to access the cost savings** while maintaining control over assets and responsibility in balancing requirements
- Improved market transparency and liquidity** with inter- and intra-regional dispatches



PNM Anticipated to Join EIM in April 2021

PNM Expected to Join EIM in 2021

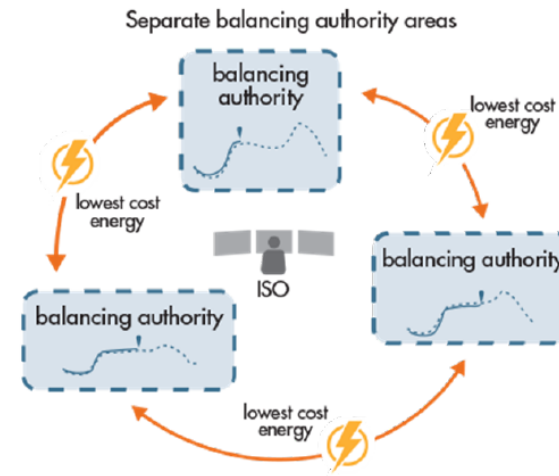
■ Timeline

- PNM anticipates to join the Western EIM in April 2021 with favorable cost benefit analysis. Estimated \$20.9M initial capital and \$7.4M other expenses to join; estimated benefits from \$10.6M-\$19.4M annually
- On May 7, 2019, CAISO filed to FERC the EIM Implementation Agreement between CAISO and PNM
- On June 26, 2019, FERC accepted for filing effective July 7, 2019, the EIM Implementation Agreement between CAISO and PNM

■ Benefits

- PNM's load peaks earlier in the day than the majority of load in the West and its robust transmission interconnections with its neighbors in the West can provide a conduit to make market exchanges that are cost effective and bring benefit to consumers in New Mexico
- Preserves PNM autonomy, including compliance, balancing, and reserve obligations
- Utilizes EIM automated dispatch to minimize costs, resolves imbalances and avoid congestions

EIM Ops: Real Time 5- and 15-min Market



- The EIM allows balancing authorities ("BAs") to leverage the benefits of real-time balancing while also maintaining all of their existing authority, i.e., BAs remain responsible for procurement or self-provision of reserves and ancillary services.
- All BAs start the hour with matched generation and forecasted load. Imbalances occur within the hour because load and generation typically vary slightly from what is forecasted.
- Security constrained economic dispatch ("SCED"): Resources within the EIM voluntarily provide bids and the EIM looks across the EIM region and dispatches the most economical bids available to meet these imbalances, while respecting the transmission limits.



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Glossary (1/2)

Balancing Authority (BA): A Balancing Authority (BA) is the entity that integrates resource plans ahead of time, maintains Demand and resource balance within one or more Balancing Authority Areas, and supports Interconnection frequency in real time.

Balancing Authority of Northern California (BANC),

CAISO: The California Independent System Operator is a non-profit Independent System Operator serving California. It oversees the operation of California's bulk electric power system, transmission lines, and electricity market generated and transmitted by its member utilities.

Day Ahead (DA) market: DA market is a financial market where market participants commit to buy or sell wholesale electricity one day before the operating day, to help avoid price volatility. This market produces one financial settlement.

Distributed energy resources (DERs): Electricity-producing resources or controllable loads that are directly connected to a local distribution system or connected to a host facility within the local distribution system.

Electric Reliability Council of Texas (ERCOT): ERCOT is an independent system operator (ISO) that operates the electric grid and manages the deregulated market for 75 percent of Texas.

Energy Imbalance Market (EIM): EIM is an intra-hour centralized real time energy market used to economically and securely dispatch participating resources to efficiently balance supply, transfers between participating Balancing Authority Areas (EIM Entity BA areas), and load across the market's footprint (EIM Area).

Gigawatt (GW): A GW is a unit for electric power equal to one billion (10^9) watts.

Gigawatt hour (GWh): A GWh is equal to 1 GW of electricity used continuously for one hour.

ISO-NE: ISO New England is an independent, non-profit Regional Transmission Organization (RTO), headquartered in Holyoke, Massachusetts, serving Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont.

Locational Marginal Pricing (LMP): LMPs represent the marginal cost of providing the next increment of energy demand (i.e., cost to serve the next MW of load) at thousands of pricing points, or pNodes, within an electricity grid. It provides price signals that account for the additional costs of electricity caused by transmission congestion and line loss at various points on the electricity grid.

Midcontinent Independent System Operator (MISO): MISO is an Independent System Operator and Regional Transmission Organization providing open-access transmission service and monitoring the high-voltage transmission system in the Midwest United States and Manitoba, Canada and a southern United States region which includes much of Arkansas, Mississippi, and Louisiana.

Megawatt (MW): A megawatt is a unit for measuring power that is equivalent to one million watts or 1,000 kilowatts (kW).

Megawatt hour (MWh): A megawatt hour is equal to 1 megawatt of electricity used continuously for one hour, or 1,000 kWh.

Million British Thermal Unit (MMBtu): The British thermal unit (Btu or BTU) is a traditional unit of heat; it is defined as the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit. For natural gas, 1 MMBtu \equiv 1,000,000 Btu

New York ISO (NYISO): The New York ISO manages NY's power grid and energy markets.

Glossary (2/2)

North American Electric Reliability Corporation (NERC): a not-for-profit international regulatory authority whose mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid. NERC develops and enforces Reliability Standards; annually assesses seasonal and long-term reliability; monitors the bulk power system through system awareness; and educates, trains, and certifies industry personnel. NERC's area of responsibility spans the continental United States, Canada, and the northern portion of Baja California, Mexico.

Operational Flow Order (OFO): An Operational Flow Order is a mechanism to protect the operational integrity of the pipeline. Pacific Gas and Electric Company's California Gas Transmission may issue and implement System-Wide or Customer-Specific OFOs in the event of high or low pipeline inventory.

Peak Load: The highest hourly integrated Net Energy For Load within a Balancing Authority Area occurring within a given period (e.g., day, month, season, or year).

PJM Interconnection: PJM is a regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia.

PNM: Public Service Company of New Mexico - New Mexico's largest electricity provider.

Real Time (RT): The Real-Time Energy Market lets market participants buy and sell wholesale electricity during the course of the operating day. The Real-Time Energy Market balances the differences between day-ahead commitments and the actual real-time demand for and production of electricity.

Renewable Portfolio Standards (RPS): An energy policy which specifies the proportion of the energy mix that must come from renewable resources for an electricity provider. Typically, an RPS will require a certain percentage of renewables be used (on a capacity or energy basis) by a certain year in the future. Such policies will typically specify interim percentage targets in addition to final goals for renewable generation.

Reserve Margin: Planning reserve margin is designed to measure the amount of generation capacity available to meet expected demand in planning horizon. Planning Reserve Margin equals the difference in Deliverable or Prospective Resources and Net Internal Demand, divided by Net Internal Demand.

Regional Transmission Organization (RTO): A regional transmission organization is electric power transmission system operator which coordinates, controls and monitors a multi-state electric grid. The transfer of electricity between states is considered interstate commerce and electric grids spanning multiple states are therefore regulated by the Federal Energy Regulatory Commission (FERC).

Security constrained economic dispatch (SCED): The operation of generation facilities to produce energy at the lowest cost to reliably serve consumers, recognizing any operational limits of generation and transmission facilities.

SMUD: Sacramento Municipal Utility District

Southwest Power Pool (SPP): oversees the bulk electric grid and wholesale power market in the central United States on behalf of a diverse group of utilities and transmission companies in 14 states.

Western Electricity Coordinating Council (WECC) promotes Bulk Electric System (BES) reliability in the Western Interconnection. WECC is the Regional Entity responsible for compliance monitoring and enforcement. In addition, WECC provides an environment for the development of Reliability Standards and the coordination of the operating and planning activities of its members as set forth in the WECC Bylaws.

Terawatt (TW): A GW is a unit for electric power equal to one trillion (10^{12}) watts.

Terawatt hour (TWh): A TWh is equal to 1 TW of electricity used continuously for one hour.

Experts with Impact™

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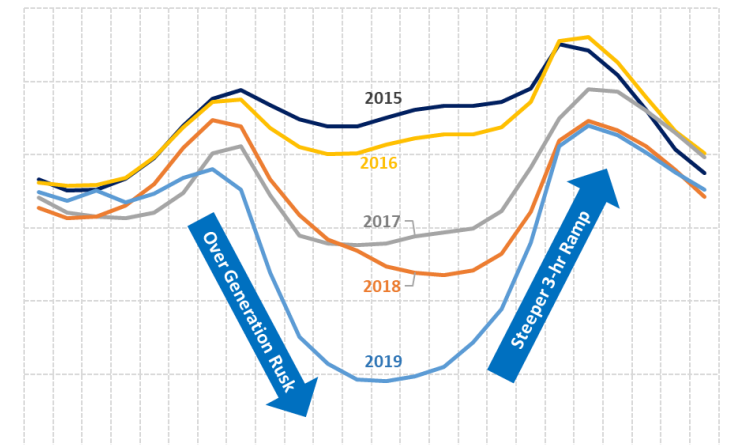
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ATTACHMENT A

Private & Confidential

How does the evolving Western Interconnect effect NM and LAC

- Operational Changes
 - Reduced Bilateral market trading
- Services from PNM affected
 - Bandwidth calculation
- Reserve margin Risk-
 - Positive Reserve Margin in the LL hours
 - Negative Reserve Margin in the Duck Curve Ramp hours



In Conclusion

- Resource planning is ongoing and dynamic
- Due to load, generation profiles and market dynamics, DPU is currently pursuing two resource options
 - CFPP
 - ATC firm renewables
- DPU will continue to monitor all aspects of Resource Planning and report to BPU and County Council as required.

Questions?

Glossary

- ATC – Around the Clock
- Bandwidth – LAC has a +/- 2 MW bandwidth requirement under PNM's tariff. This means our scheduled power to serve our forecasted load must be within +/- 2 MW of our actual load. If we are above or below this bandwidth, PNM applies a penalty for that period.
- Block Power – A Power Purchase Agreement with a specified capacity over a specified period of time.
- CFPP – Carbon Free Power Project
- CT – Combustion Turbine
- Demand Side Resources – Roof-top solar
- DER – Distributed Energy Resource
- DOE-NNSA-LANL Department of Energy-National Nuclear Security Administration-Los Alamos National Laboratory
- ECA – Electric Coordination Agreement
- FER Committee – Future Energy Resource Committee
- HL – High Load
- IRP - Integrated Resource Plan
- JMEC – Jemez Mountain Electric Co-op
- LAC – Los Alamos County
- LAPP - Los Alamos Power Pool
- LCOE – Levelized Cost of Energy
- LL – Low Load
- LRS – Laramie River Station

Glossary

- MWh – Unit of Energy, 1 mega-watt over 1 hour
- NORA – Northern Rio Arriba Electric Co-op
- NTUA – Navajo Tribal Utility Authority
- Peak and Off Peak – market pricing during the high demand periods and low demand periods
- PNM - Public Service Company of New Mexico
- PPA – Power Purchase Agreement
- PV Solar – Photo Voltaic Solar
- SJGS – San Juan Generating Station
- SMR or SMNR – Small Modular Reactor or more specifically a Small Modular Nuclear Reactor
- Supply Side Resources – Utility Scale Power
- TA3 CC – LANL Tech Area 3 Combined Cycle
- TSGT – Tri-State Generation & Transmission
- WACM – Western Area Colorado Missouri
- WALC – Western Area Lower Colorado
- WAPA – Western Area Power Administration “Western”
- WECC – NM – Western Electricity Coordinating Council –New Mexico market pricing