Integrated Resource Plan (IRP) Implementation Update

April 17, 2024

LOS ALAMOS

LAPP Goals

- Provide reliable & cost-effective power
- Achieve carbon free goals
  - LAC carbon neutral by 2040 goal
  - Executive Order 14057: 100% carbon pollution-free electricity (net annual) by 2030, including 50% ATC carbon pollution-free electricity
- Build a diverse generation and storage portfolio
- Transition to a 15% positive reserve margin
- Continuously evaluate status and look for new reliable, cost competitive, and preferably carbon free resources

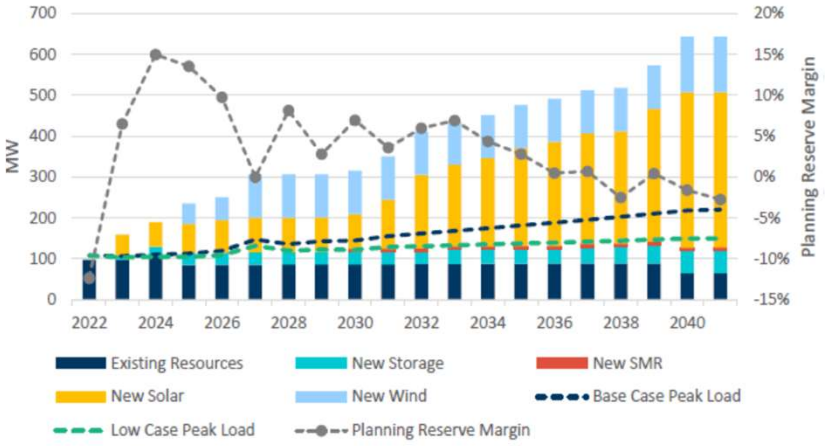
LOAD FORECAST & PREFERRED PORTFOLIO

- The IRP guides resource planning
- Changes from the 2022 IRP
  - 8MW CFPP project ended 11/8/2023
  - 15+25MW Uniper PPAs terminated 3/20/24
  - Foxtail Flats Solar 170MW PPA, 80MW/320MWh ESA executed 3/8/2024
  - Mercuria 40MW ATC PPA executed 3/20/24
  - 4MW Geothermal and 10MW gas turbine in consideration through UAMPS
  - Wind unlikely due to transmission

Exhibit 3: LAC and LANL IRP Preferred Resource Plan Cumulative New Builds Summary

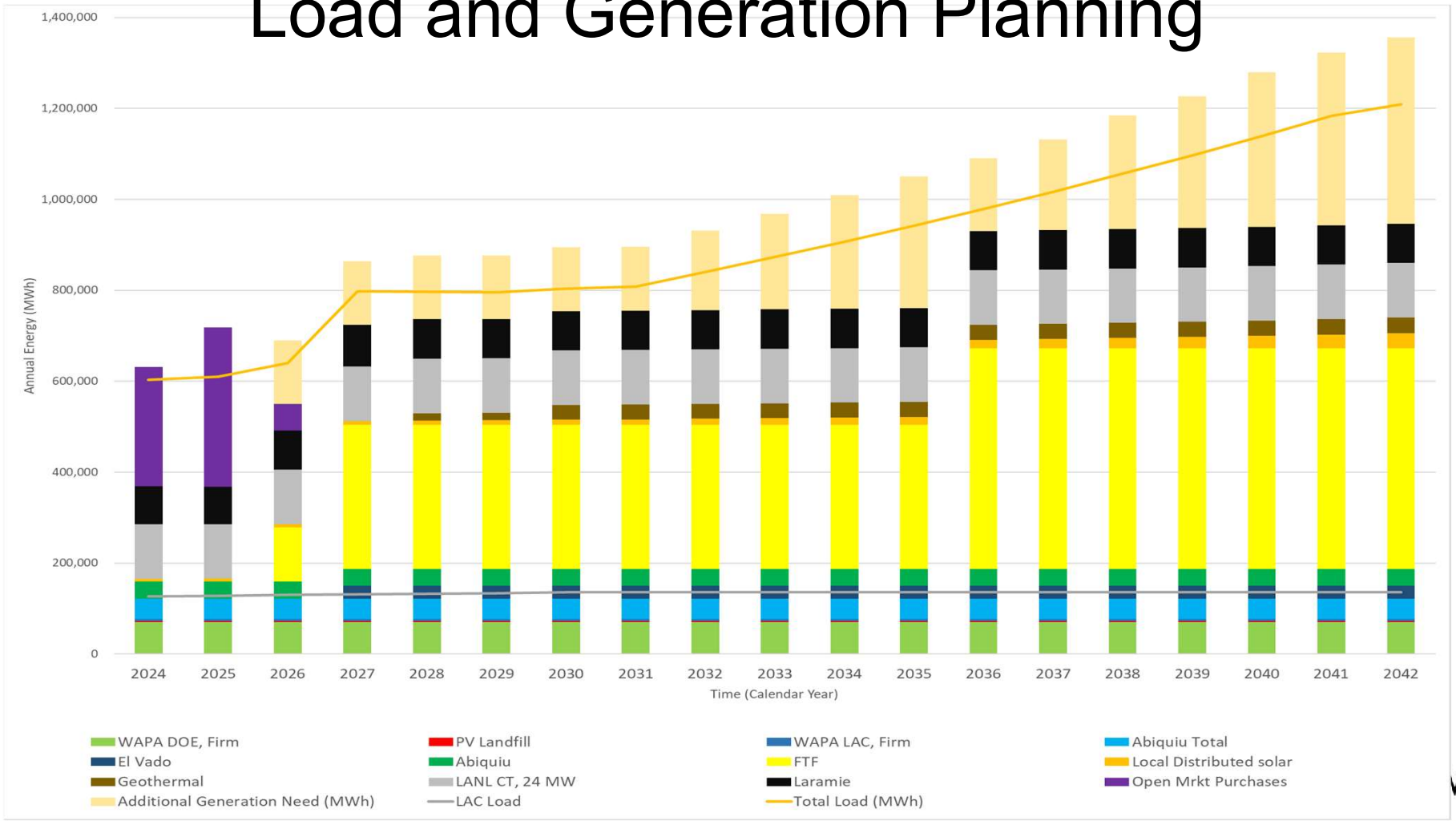
Year	Storage	Solar	Wind	SMR	Total
	MW	MW	MW	MW	MW
2025	30	70	50	0	150
2027	30	85	105	0	220
2030	30	85	105	8	228
2035	35	240	105	8	388
2040	55	380	135	8	578
2041	55	380	135	8	578

Exhibit 4:Preferred Resource Plan Resources, LAPP Peak Load, and PRM



LOS ALAMOS

Load and Generation Planning



Additional Generation Needs

YEAR	2024	2025	2026	2027	2028	2029	2030	2035	2040
Total Load (MWh)	603,000	610,000	640,000	797,000	796,000	796,000	804,000	942,000	1,139,000
Total Generation (MWh)	660,000	754,000	575,000	755,000	770,000	769,000	789,000	795,000	973,000
Additional Generation Need (MWh)	-	-	145,000	145,000	145,000	145,000	135,000	290,000	340,000
Additional ATC Power Capacity (MW)	-	-	18	18	18	18	17	36	42
Margin (MWh)	58,000	143,000	80,000	102,000	119,000	118,000	120,000	143,000	174,000
Reserve Margin (%)	10%	24%	12%	13%	15%	15%	15%	15%	15%

Future Resource Being Investigated

Planned Unplanned Investigating

Types		Resources	Considerations
Baseload	Thermal	Combined Cycle (CC)	Inconsistent with carbon neutral goal
		Laramie River Station (LRS)	Exit when economical, no later than 2042[1]
	Nuclear	Carbon Free Power Project (CFPP)	Subscription levels: 0, 8, 36 MW
	Hybrid	ATC PPA with 28% Renewable[2]	Near term bridge PPA to replace San Juan Unit 4
	Firm Renewables	Solar + Wind	Uniper contract + more
		Solar + Battery	Solar weather dependent
		Geothermal	High cost, opportunistic and geography dependent
		Fuel Cells	< 5 MW size, implemented in other national labs
Peaking	Thermal	Reciprocating Internal Combustion Engine (RICE)	Explore in IRP for dispatchability and balancing
		Simple Cycle Gas Turbine (SCGT)	Explore in IRP for dispatchability and balancing
	Storage	Pumped Hydro	Cost and ownership of water rights; Opportunistic and geography dependent
		Lithium-ion Battery	Duration considerations
		Vanadium Redox Flow Battery	High-cost; lack of actual projects development
Intermittent	Renewables	Solar (onsite or offsite)	Weather dependent
		Onshore Wind	Weather dependent; transmission constraints

Source: Los Alamos County 2022 Integrated Resource Plan, p. 45, exhibit 32.

LOS ALAMOS

IRP Implementation Tasks

- Currently pursuing off-peak night energy starting March 2026 to supplement Foxtail Flats and baseload resources
- Currently pursuing new dispatchable and carbon-free generation
- Currently monitoring long-duration storage technologies
- Planning to conduct new IRP after July 2025 Electric Coordination Agreement is effective

The End