

Carbon Free Power Project Town Hall Meeting

August 3, 2020
Department of Public
Utilities



LOS ALAMOS

Introductions

Agenda

- How did we get here?
 - Factors /Considered in Resource Planning
 - 2017 IRP Recommendations
 - New Resources Considered
 - Generation Plan over 20 year planning horizon
- Carbon Free Power Project (CFPP) Specifics
 - Utah Associated Municipal Power Systems (UAMPS)
 - Project History
 - Public information & Involvement Plan
 - CFPP Schedule, Cost and Off-ramps
- Consideration for continued Participation
- Conclusion
- BPU/CC Decision
- Questions

Questions

- At the end of the presentation, we will open the meeting up for questions.
- Participants can ask questions by using the raise hand feature in Zoom or by selecting STAR 9 if participating by phone.
- I will try to get to as many questions in time allotted, if we don't get to your question, please email to robert.cummins@lacnm.us. Questions and answers will be posted on our website.

How Did We Get Here?

- Need for Replacement Resources to serve LAC Future Power Demands and retiring generations assets
- 2040 Carbon Neutral Goal
- Future Energy Resources Committee Recommendations
- Board of Public Utilities Strategic Policies
- 2017 Integrated Resource Plan (IRP)

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

2017 Integrated Resource Plan

Portfolio	San Juan 4 Exit Date	LRS Exit	LAPP New Builds	Reserve Margin (2017-2036)
S8: Solar Firmed with RICE Short Capacity	2022	No Exit	Large RICE: • 2017- 18 MW; 2025- 18 MW; 2030- 18 MW Solar PV: • 2017- 25 MW; 2025- 25 MW; 2030- 25 MW	LAPP Summer: 9% LAPP Winter: -5%
S9: Solar with Storage Short Capacity	2022	No Exit	Solar with Storage (onsite): • 2017- 13 MW; 2025- 8 MW • 2030- 6 MW	LAPP Summer: -11% LAPP Winter: -26%
S10: SMR, Solar with Storage Short Capacity	2022	No Exit	Solar with Storage (onsite): • 2017- 13 MW; 2025- 4 MW Nuclear (offsite): • 2026- 16 MW	LAPP Summer: -9% LAPP Winter: -23%

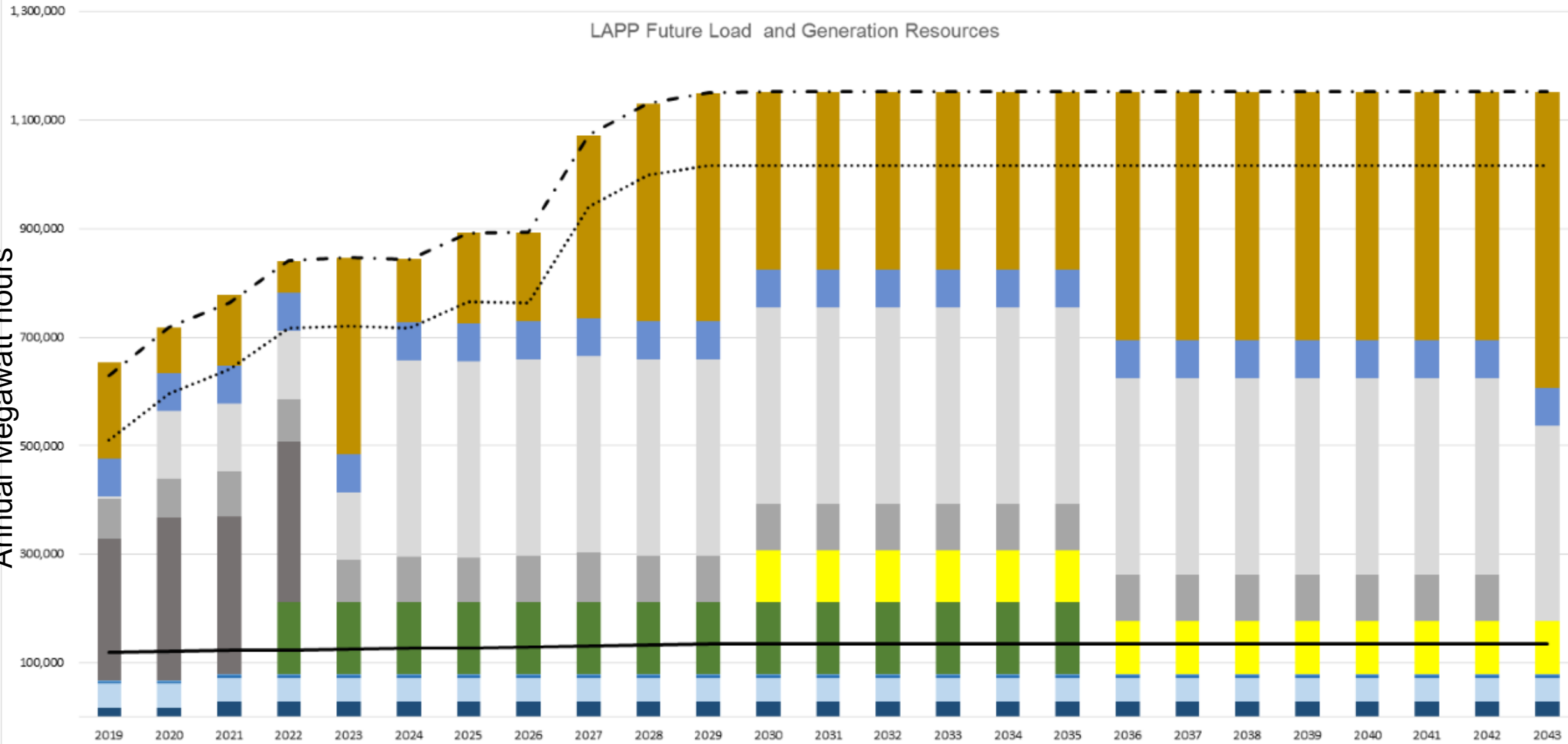
- Staged new build of solar capacities is best to achieve 90 percent carbon neutral by 2036 for LAC and 30 percent on-site renewable generation during 2025-2036 for LANL.
- The firming mechanism could be either battery storage or on-site RICE units. On-site RICE units are more expensive but allow more flexibility during prolonged weather events when solar PV does not generate.
- A phased approach to add smaller and incremental capacity resources on a need basis provides overall lower cost benefits for LAPP as well as maintain flexibility in the face of future uncertainties.
- **If SMR costs can be capped and development risks can be mitigated, it could be considered especially in the event that local land becomes unavailable for the amount of solar needed to achieve renewable goals.**

New Resources Considered

- 2008 Cochiti Hydro
- 2011 Caballo Hydro
- 2012 Horse Butte Wind
- 2015 Carbon Free Power Project (CFPP)
- 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 UNIPER Firm Solar/Wind 15 MW Block Power, Around The Clock

LAPP Future Load and Generation Resources

Annual Megawatt hours



- El Vado
- Abiquilú Total
- WAPA LAC, Firm
- PV Landfill
- 15 MW Firm PPA
- CFPP
- San Juan
- Laramie
- LANL CT, 25 MW
- WAPA DOE, Firm
- Open Mkt Purchases
- LANL Load
- LAC Load
- Total Load

(100,000)

CFPP Project Specifics

- Partners (UAMPS, NuScale, Fluor, DOE)
- Twelve 60 megawatt (MW) small modular reactors for a total plant capacity of 720 MW's.
- Plant sited at the Idaho National Laboratory
- LAC current subscription is 11.186 MW
- Why NuScale SMR Design Technology
 - Safety - No AC/DC or Operator Interaction for safe shut down
 - Modularity - Factory built
 - Capable of following intermittent resources like wind and solar

UAMPS

Utah Associate Municipal Power Systems

- 47 Public Power Members in five states
 - LAC joined UAMPS in 2014
- 36 members participating in CFPP
- <https://www.uamps.com/>

Project History

- August 17, - 2015 BPU Approval of Study Phase Sitting Agreement
- April 10, 2018 - BPU and CC Approval of Power Sales Contract with 8 MW subscription
- Dec. 17, 2019 - Approval of JUMP Resolution for an additional 3.186 MW for total of 11.186 MW

Public Information and Involvement

- Dec. 1, 2016 - 1st CFPP Town Hall
- Jan. 12, 2017 - CFPP Town Hall
- July 12, 2017 - IRP Town Hall
- Jan. 25, 2018 - CFPP Town Hall
- August 3, 2020 – CFPP Town Hall

CFPP Schedule, Cost & Off-Ramps (July 14, 2020 Amended BPF)

Phased Approach	Start Date	End Date	100% Cost	UAMPS	Los Alamos County	
				Net of Cost Share	Share 11.186 MW	Off-Ramps
Study Phase Sitting Agreement (Fatal Flaw Analysis) (1)	9/17/15	12/31/17	\$145,540		\$128,643	(5)
Licensing Period 1st Phase Signed PSC with BPF at \$6 M Spend (8 MW Subscription)	4/10/18	12/17/19	\$6,000,000	\$1,500,000	\$78,774	(5)
Licensing Period 1st Phase Amended BPF (Additional Subscription of 3.186 MW for total Of 11.186)	12/17/19	9/15/20	\$3,000,000	\$976,000	\$51,256	(5)
Subtotal					\$258,673	
(2) Licensing Period 1st Phase, COLA Prep, 7/14/2020 BPF Cost Commitment	7/16/20	4/1/23				
Approval/Execution of DCRA, EPC Develop Agreement & DOE Multi Year Award	8/17/20	8/17/20				
Design Certification for SMR Technology Approved by NRC	9/30/20	12/30/20				
Fluor completes Class III Estimate, Contractual Run of ECT \$55/MWh in 2018 Dollars	9/1/21	10/30/21	\$63,000,000	\$11,000,000		
If ECT Failure, PMC terminates and seeks 80% reimbursement under DCRA, LAC share for this phase is \$115,536 for a total sunk cost of \$374,209 (6)				\$ 2,200,000		(6)
Subtotal		9/1/21				
COLA and Class II Estimate Complete with Contractual Run of ECT	4/1/23	4/1/23	\$129,931,556	\$19,933,912	\$1,046,849	(5)
Project Contingency 20 %					\$209,370	
Subtotal					\$1,514,892	
FUTURE COMMITMENTS						
(3) Combined Licensing Period Phases 1 & 2nd (Est.) COLA Prep & NRC Submittal	5/1/23	11/1/25	\$1,245,218,792	\$638,478,562	\$9,182,320.03	(5)
Combined Licensing Period Phases 1 & 2nd (Est.) COLA Prep & NRC Submittal Subtotal	5/1/23	11/1/25	\$1,375,150,348	\$658,412,474	\$10,229,169.35	(5)
(4) Total Acquisition & Construction Cost	12/1/25	6/1/30	\$6,124,293,710	\$4,759,535,481	\$73,944,672.07	

Notes:

(1) DOE LANL share approx. \$100,000 of \$128,643 as Power Pool Expense

(2) Phase being considered by Board and Council now in August 2020, LAC Share is based on 11.186 MW out of the current 213 MW subscribed as of August 2020

(3) & (4) LAC Share of 11.186 MW of fully subscribed project of 720 MW prior to COLA submittal to NRC

(5) Contractual Off-Ramp

(6) PMC - Project Management Committee Discretion Off-Ramp

Considerations for Continued Participation

- Low cost to continue for now
- Mitigate risk of future generation uncertainty by keeping CFPP as an option in a diverse portfolio
- Resource Adequacy in the West - 7 GW shortage 2024
- DOE has agreed to pay approximately 85% of UAMPS' Cost to develop the Class II Estimate
- CFPP Economic Competitive Test (ECT) \$55/MWh in 2018 Dollars

Considerations for Continued Participation Cont.

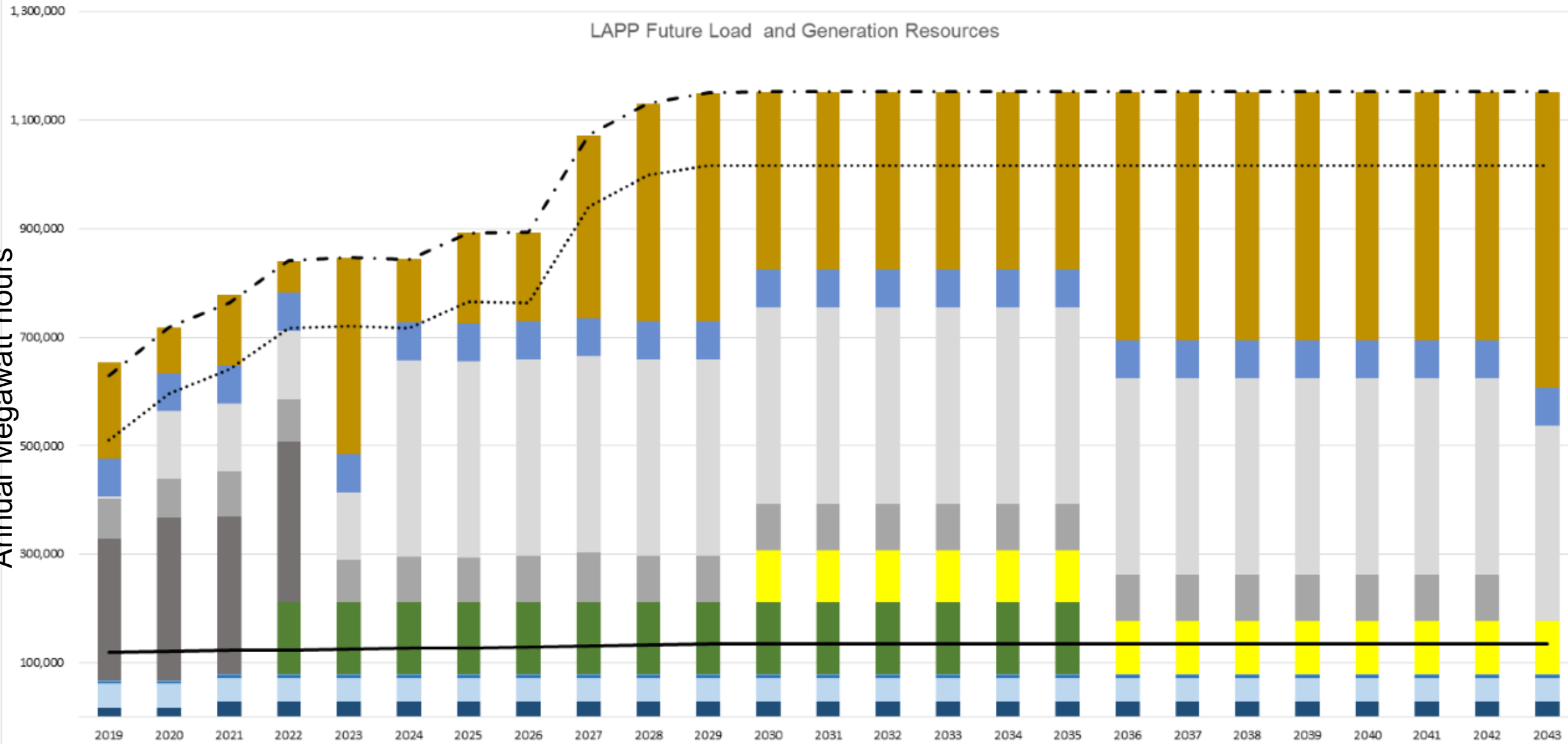
- DPU continues to seek out and evaluate generation options
 - Renewables + storage not yet economically feasible
 - Currently no other carbon-neutral options
- 2017 Integrated Resource Plan - CFPP 2nd best Alternative @ \$65/MWh
- 2021 – 2023 IRP Updated prior to COLA Submittal to NRC

In Conclusion

- Resource planning is ongoing and dynamic
- Due to load, generation profiles and market dynamics, DPU is currently pursuing two resource options
 - Carbon Free Power Project
 - UNIPER Firm Solar/Wind 15 MW Block Power, ATC
- DPU will continue to monitor all aspects of Resource Planning and report to BPU and County Council as required.

LAPP Future Load and Generation Resources

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- ⋯ LANL Load
- LAC Load
- - - Total Load

(100,000)

BPU/Council Decision

- Jul. 21 - Town Hall (recording on the website)
- Jul. 28 - Joint BPU/Council discussion (recording on website)
- **Aug. 03 - Community Town Hall** (recording on website)
- Aug. 09 – Deadline to provide written comment to the BPU and Council on the project – visit ladpu.com/CFPP
- Aug. 19 – BPU makes a CFPP decision: exit or continue (public comment can be made at the meeting via Zoom)
- Aug. 25 – Council makes a CFPP decision: exit or continue (public comment can be made at the meeting via Zoom)
- Sep. 16 - Deadline to notify UAMPS of LAC's continued participation in the CFPP

Questions?

Website

- Info on the CFPP
- History of the CFPP
- Videos of the recent CFPP meetings
- Info on how to provide Public Comment
- Contact Steve Cummins with Questions at:
robert.cummins@lacnm.us

ladpu.com/CFPP

THE END