

# Cool Mix Experiment Update - Hydropower

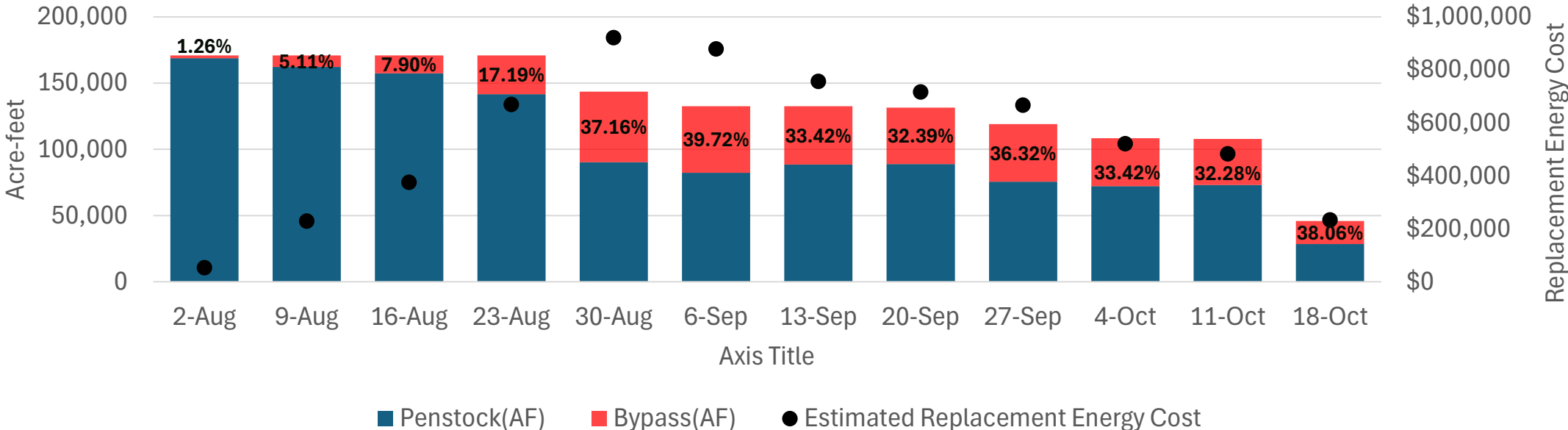
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# 2025 Cool Mix Releases

- Moved trigger upstream (River Mile 30)
- Set hard off-ramp date (October 20)
- Bypass releases began on August 3, 2025, but temporarily halted August 5, 2025
  - Bypass resumed August 12, 2025
- 72 days of bypass
- Estimated cost of replacement power: \$6.5M

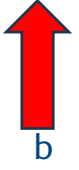
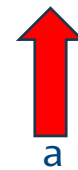
2025 Smallmouth Bass Penstock and Bypass Releases



# 2025 Smallmouth Bass Mitigation Release

- Bypassed about 145 GWh of generation
- (a) Low elevations required rough zones to be accounted for penstock releases
- (b) Coordination on implementation resulted in estimated savings of just over \$1 million

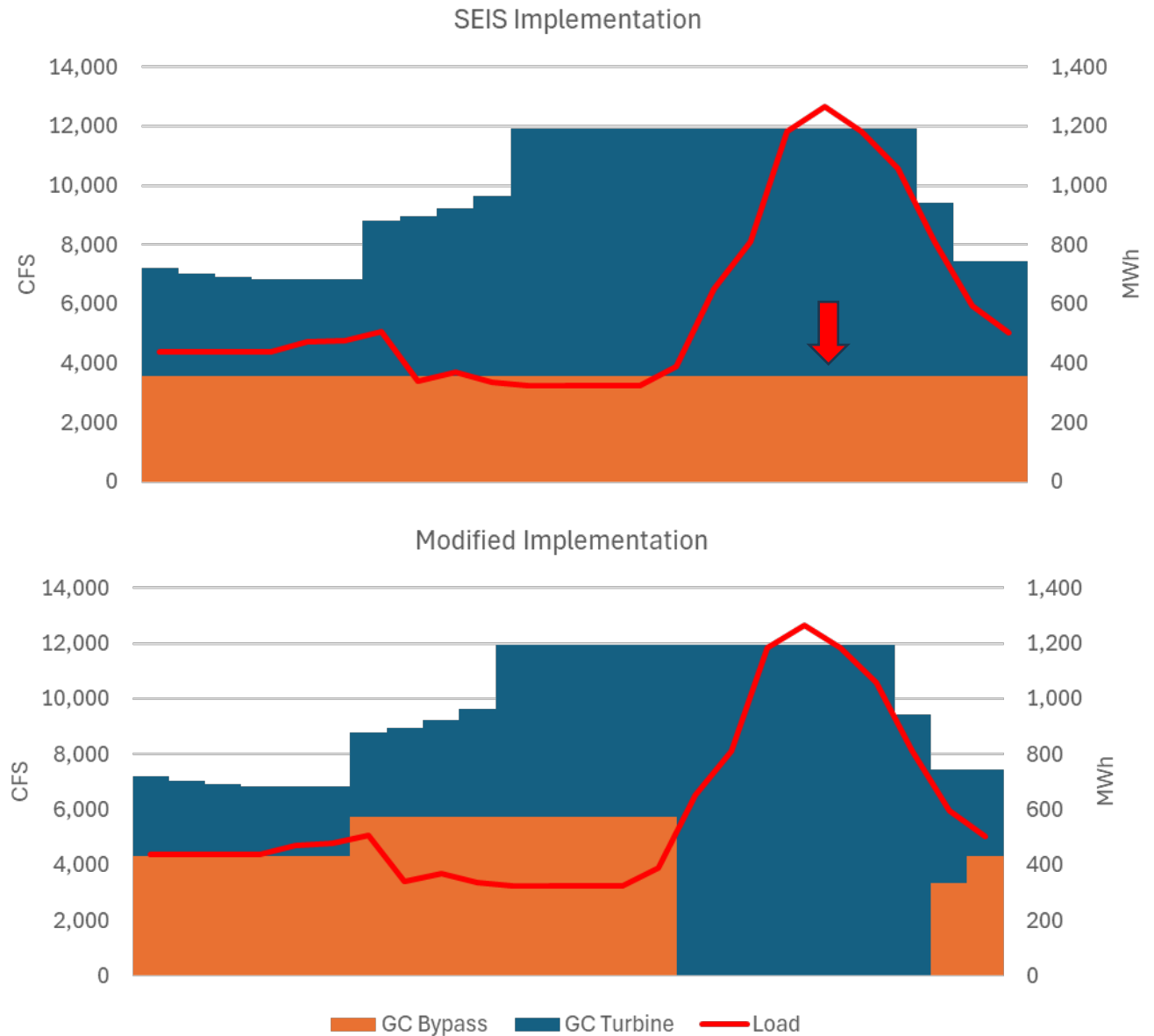
	No. days bypass	Turbine release (AF)	Bypassed volume (AF)	Percent bypassed	MWh bypassed	Purchase (\$)*	Rough zone cost*	Avoided purchases*
August	22	660,711	71,823	9.8%	28,166	\$ 1,678,158	\$ -	\$ 476,526
September	30	366,844	197,254	35.0%	76,169	\$ 3,329,522	\$ 34,110	\$ 492,341
October	20	201,656	107,042	34.7%	40,892	\$ 1,495,279	\$ 5,735	\$ 123,739
<b>Total</b>	<b>72</b>	<b>1,229,211</b>	<b>376,119</b>	<b>23.4%</b>	<b>145,227</b>	<b>\$ 6,502,959</b>	<b>\$ 39,845</b>	<b>\$ 1,092,605</b>



\*Results are preliminary, please do not cite.

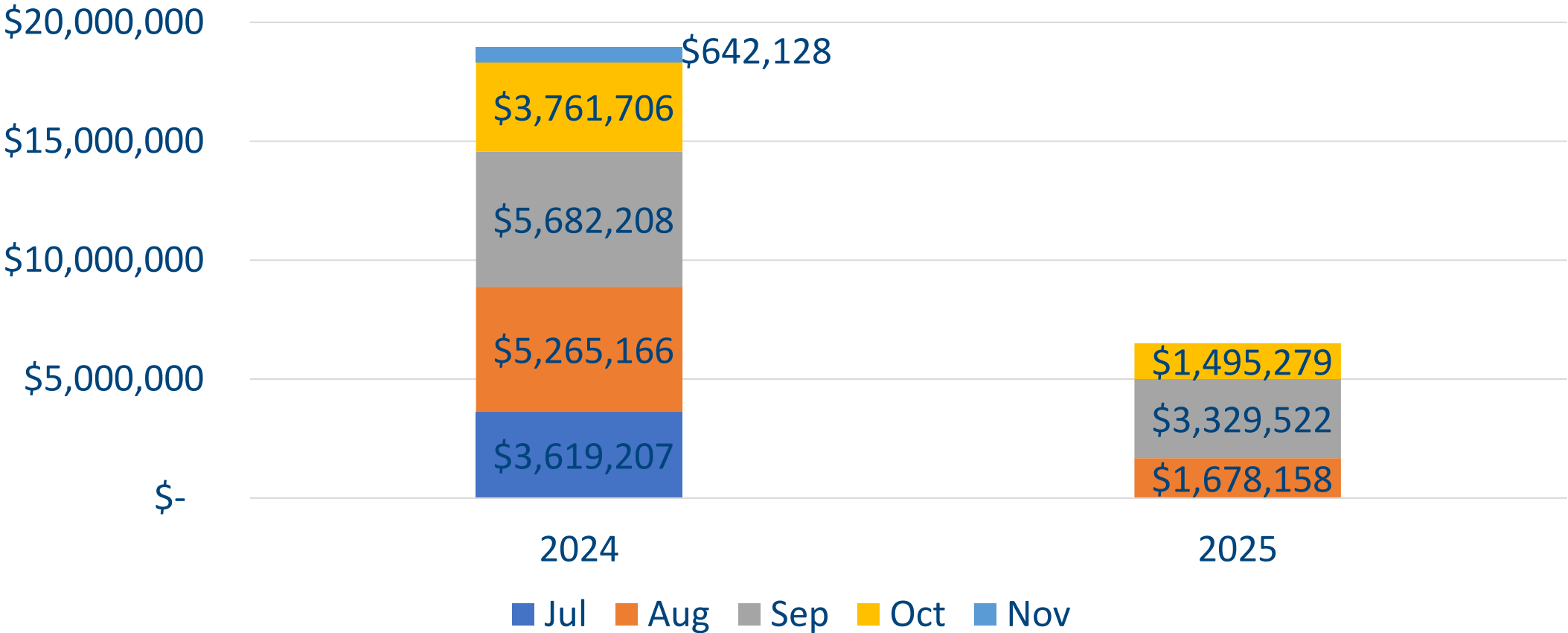
# Modified Implementation to Reduce Costs

- SEIS Assumed the same bypass for all hours.
- Increased bypass in lower demand hours.
- Stopped bypass in high demand hours.
- Did not increase generation, just changed the timing of bypass
- Estimated reduced cost:
  - \$3.4 million (2024)
  - \$1.1million (2025)



# 2024 versus 2025

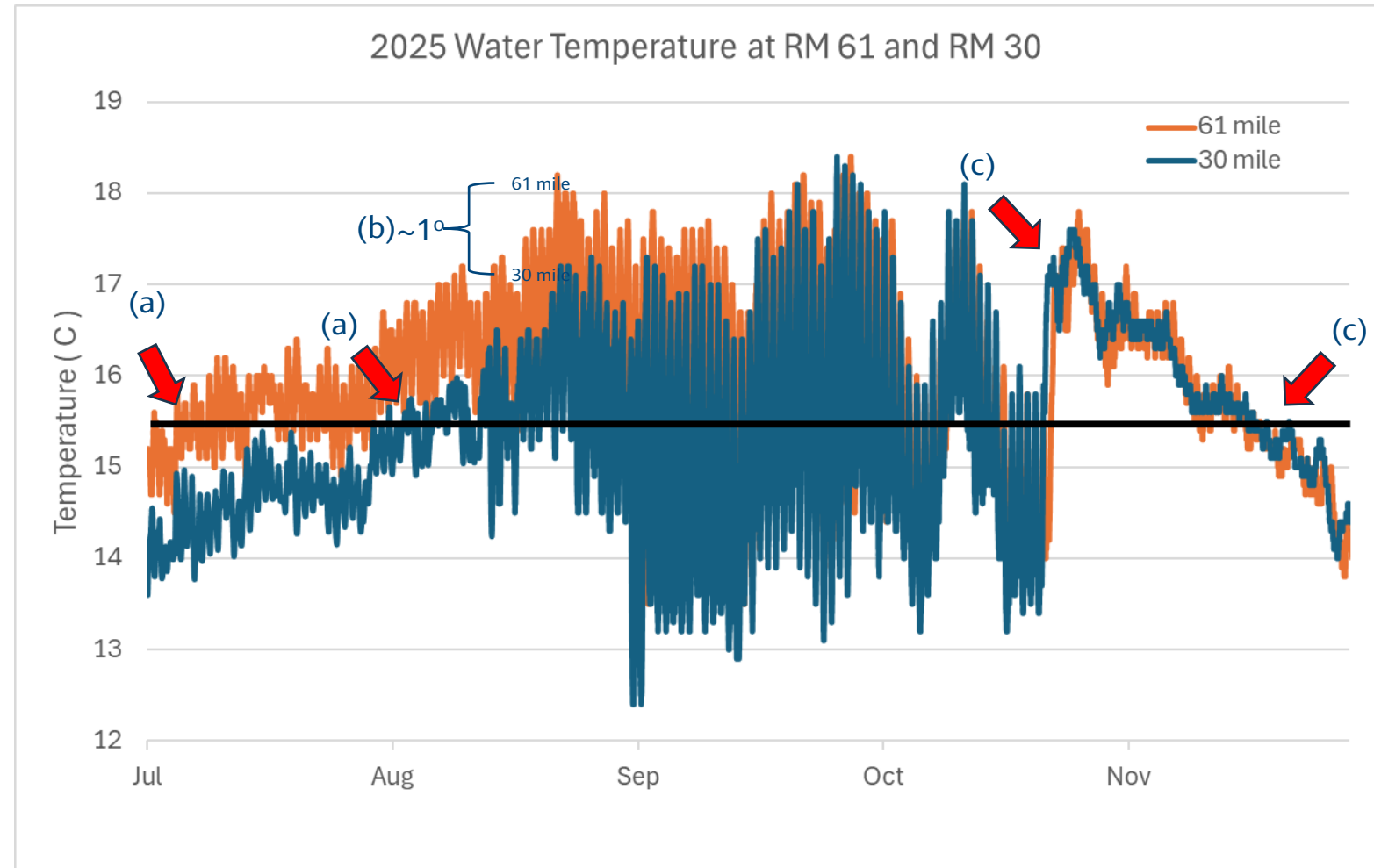
## Replacement Power Cost (\$)



Results for 2025 are preliminary, please do not cite.

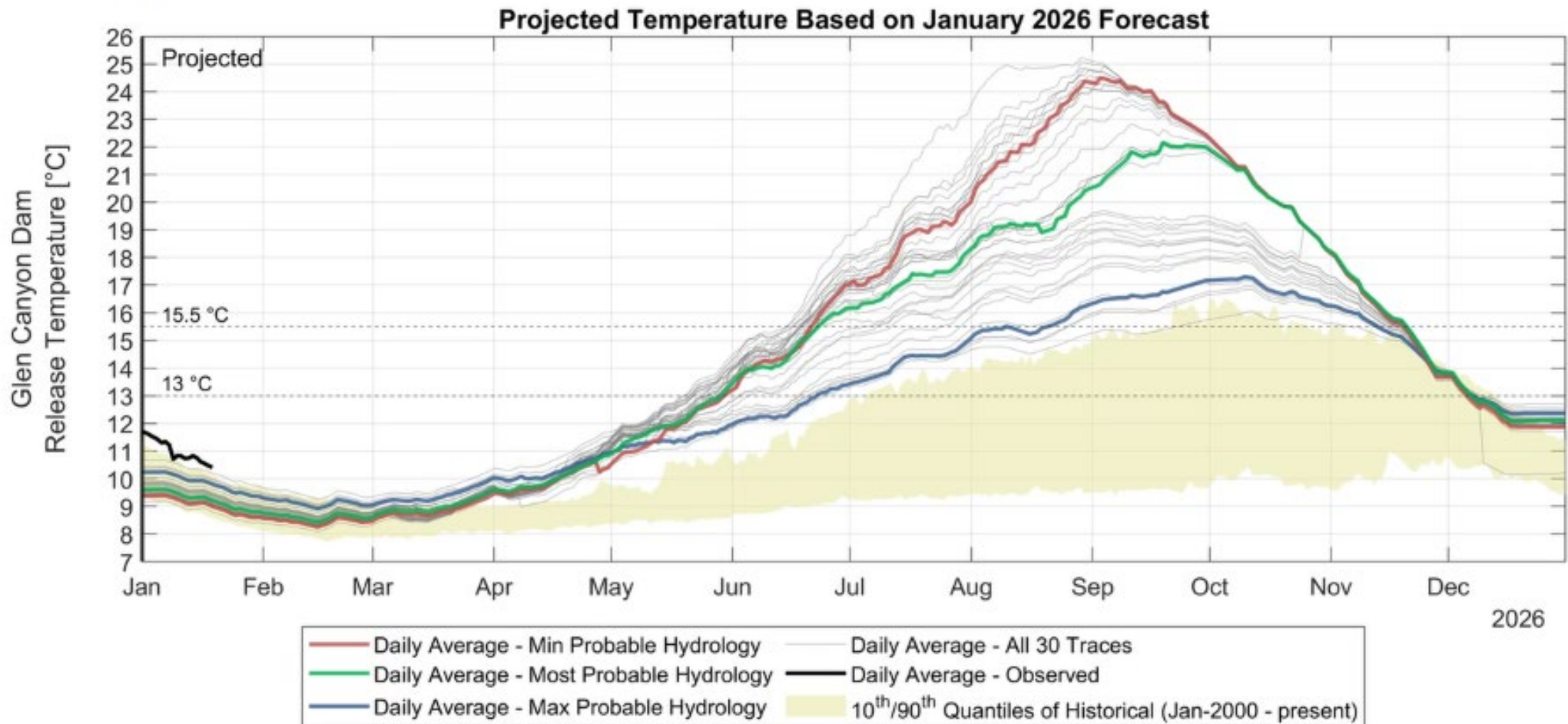
# Why Costs were Lower in 2025?

- Changed target location to RM30
  - (a) Delayed onramp from July 10 to August 12 (33 days)
  - (b) Requires less cooling of released water
- October 20 offramp opposed to temperature-driven
  - Off ramped 30 days earlier



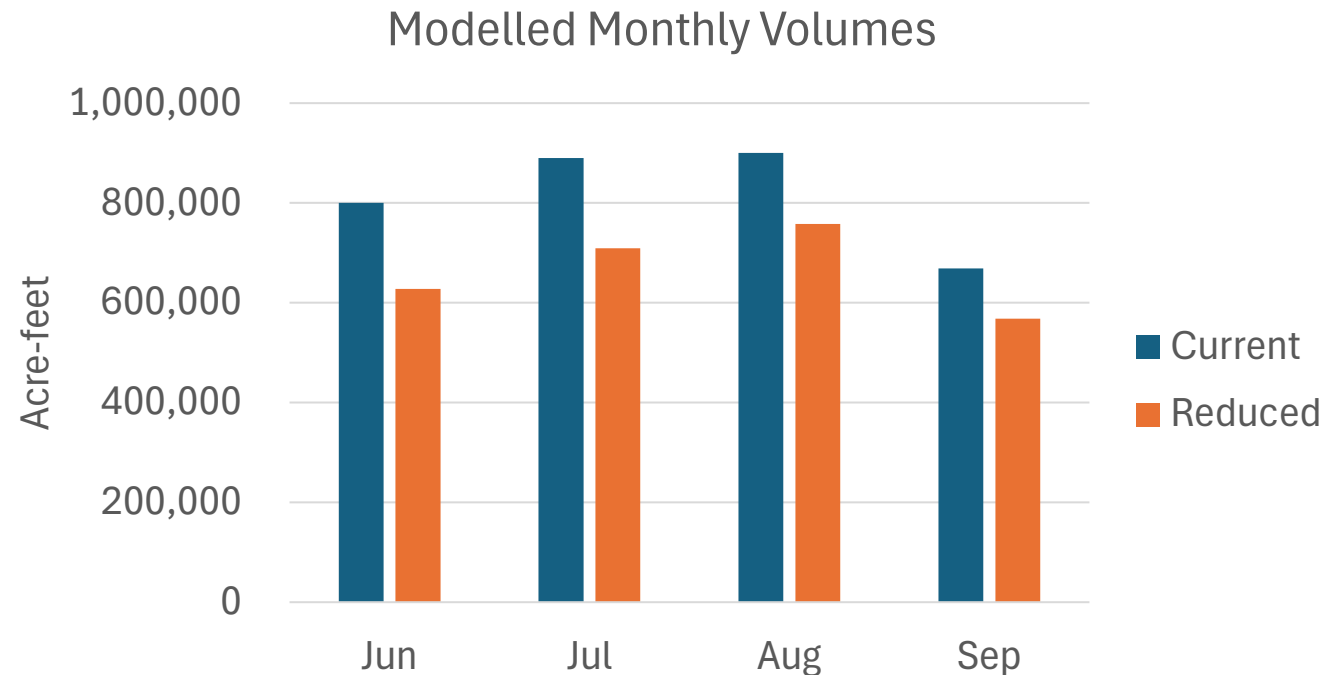
# Preliminary Look at 2026

## Glen Canyon Dam Release Temperature (\*Eppehimer et al, 2024 model)

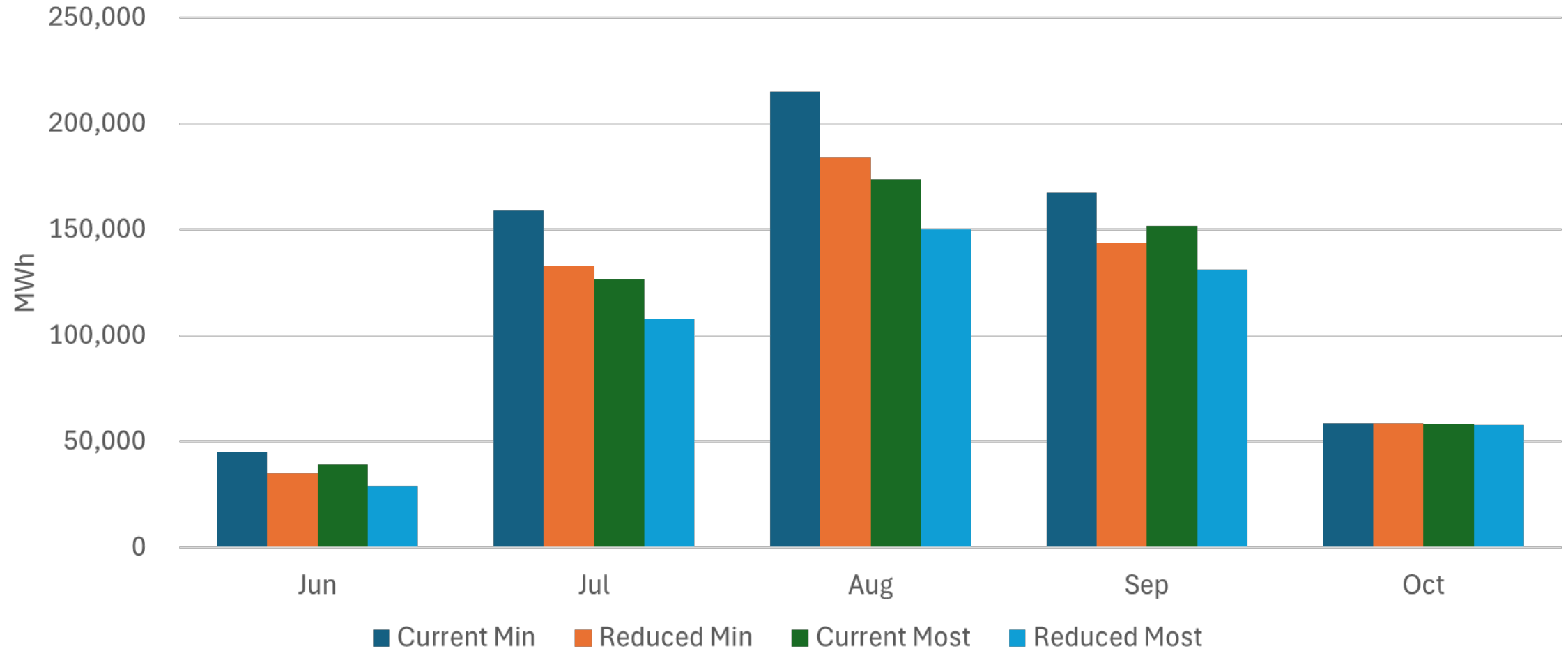


# Very Preliminary Model Results for 2026

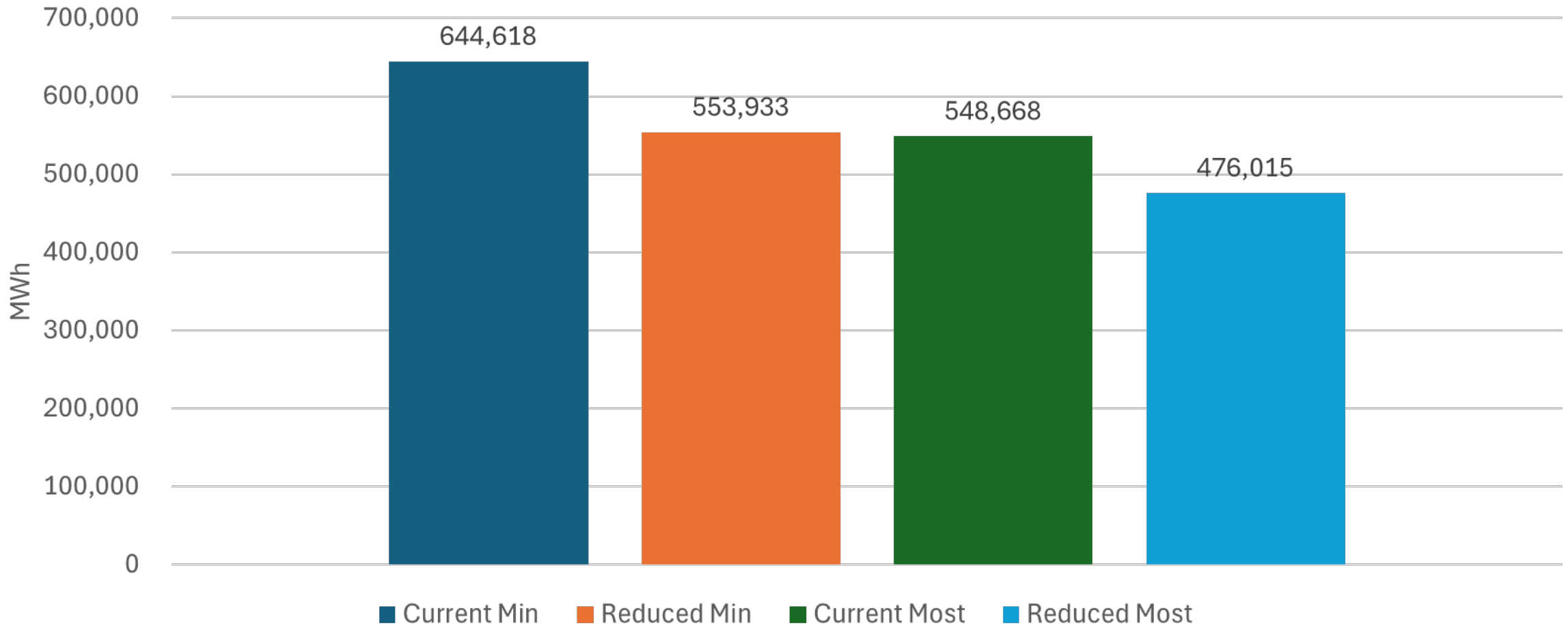
- Target = RM30
- Stop October 20
- Scenarios definitions
  - Current = monthly volumes from January 24-month study
  - Reduced = assumes water moved into June – September not released
  - Min = forecasted release temperatures for the minimum probable inflow
  - Most = forecasted release temperatures for the most probable inflow
  - Max = forecasted release temperatures for the max probable inflow



## Preliminary Estimates of Monthly Bypassed Generation

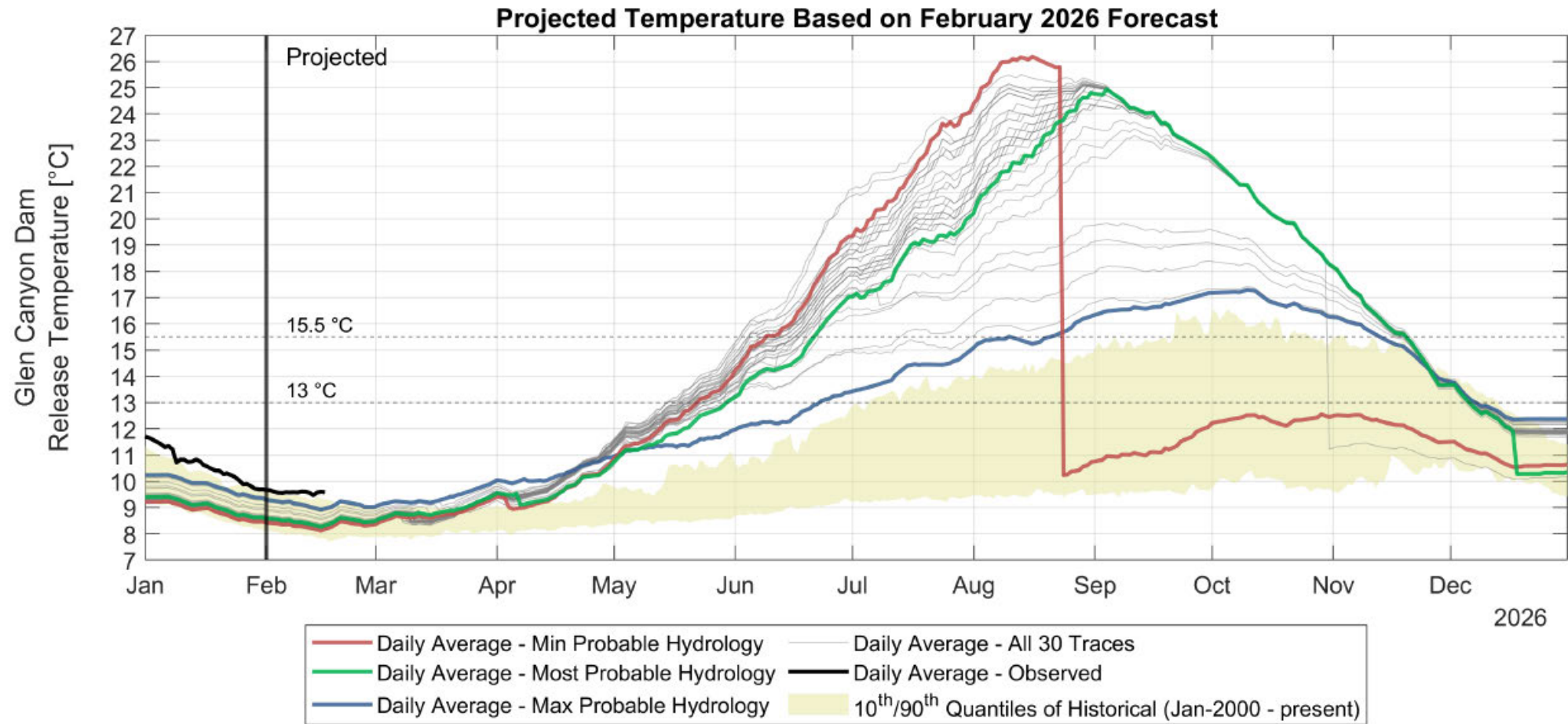


# Preliminary Estimate of Total Bypass



2024 = 372 GWh  
2025 = 145 GWh

# Glen Canyon Dam Release Temperature (\*Eppehimer et al, 2024 model)



\* <https://doi.org/10.1101/2024.01.23.576966>



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