



How CAP Shapes Energy Use

April Pinger-Tornquist, CAWCD Board Member
Brian Young, Power Program Manager

Why CAP Shapes our Energy Use

- Recall: Energy Costs Vary on Wholesale Energy Market
 - Vary Daily: By the Hour of the Day
 - Vary Seasonally: Summer Months Much Higher in the Southwest
 - Generally, Supply-Demand Principals Determine Prices
 - “Regional Energy Events” Can Drastically Change Pricing

CAP Features Enabling Shaping

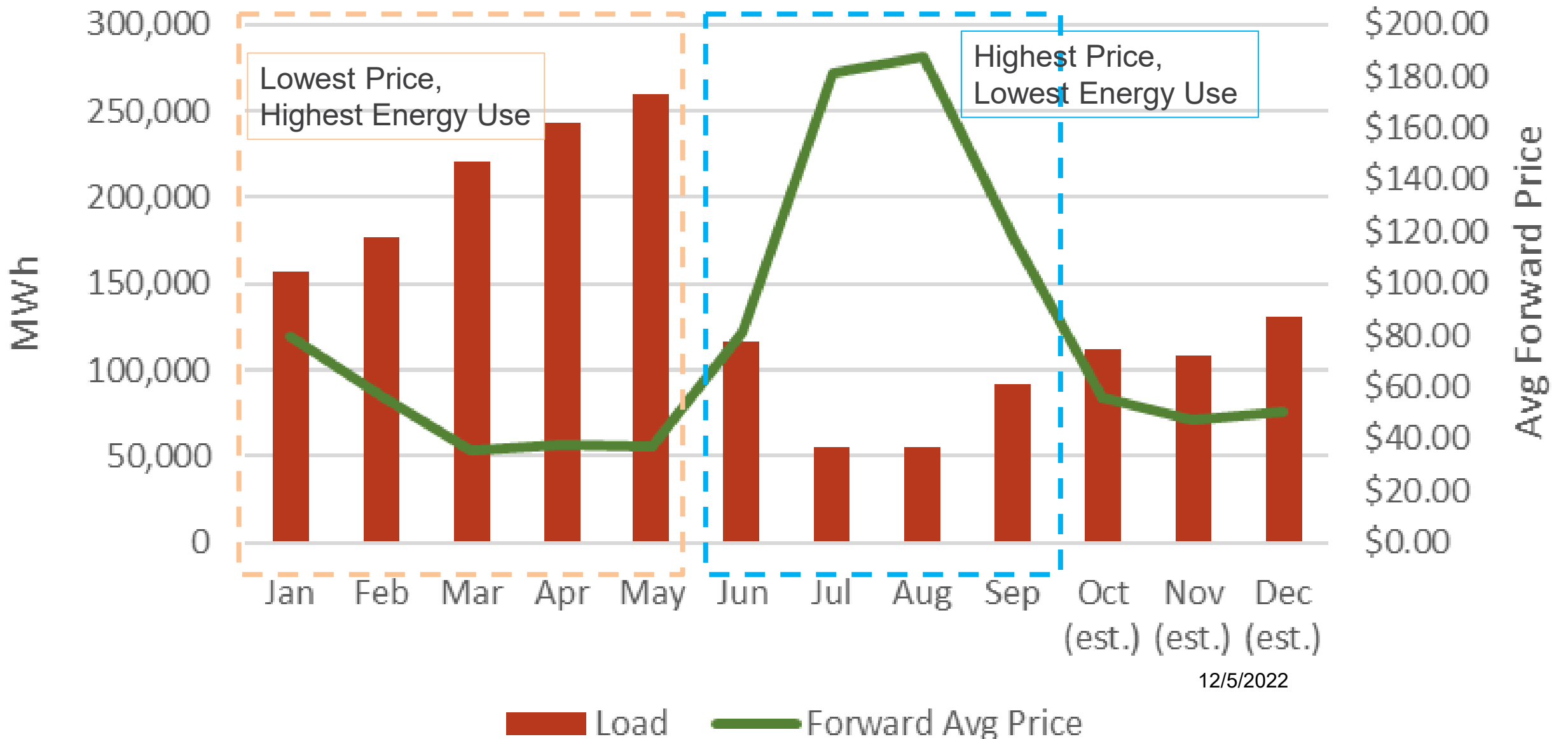
- Lake Pleasant: Regulatory Storage & Seasonal Pumping
 - **Pump** from Colorado River to fill lake **in Spring** and fall when energy costs are lower
 - **Release** from lake **in Summer** when energy costs are higher
- Storage in Reach 1 allows Mark Wilmer Pumping Plant (MWPP) to shape pumping on daily basis



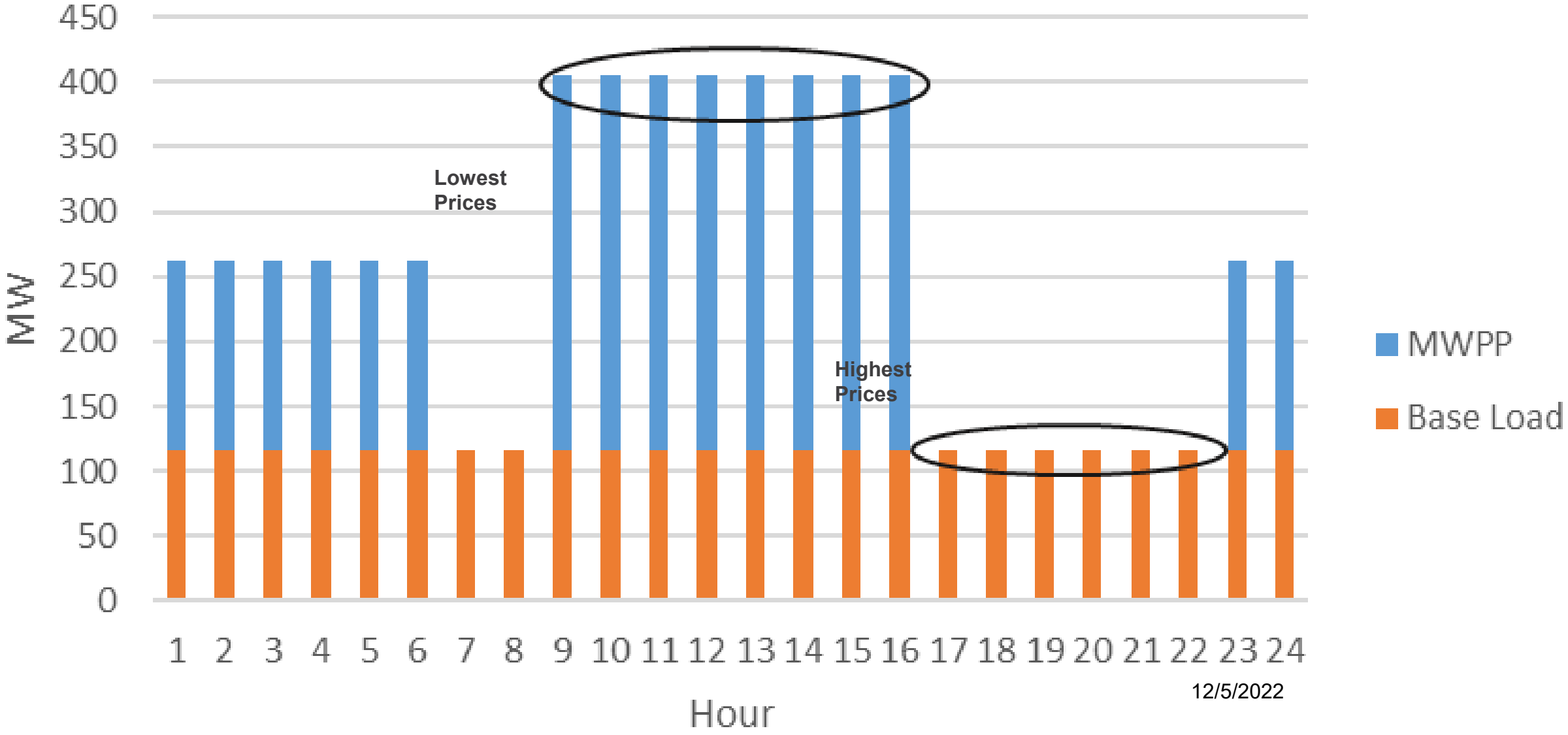
How CAP Shapes our Energy Use

- Excess pumping capacity together with the storage features of the project provides great flexibility in scheduling our pumping
- We only need to run MWPP pumps on average 40% of the time to meet current annual diversions
- Allows us to shape our energy use seasonally and daily (primarily MWPP)
- Need this flexibility to align our use to the lowest energy prices

Pump Load Shaping – Monthly



Pump Load Shaping – Daily



12/5/2022

Key Takeaways

- Large Variations in Energy Pricing: Hourly and Seasonally
- Variations = Financial Incentives for Flexible Energy Use
- CAP's Physical Features Facilitate Significant Energy Shaping
- Energy Shaping: Largest Single Factor Keeping CAP's Pumping Energy Costs Far Below Average Market Prices