

## Power TF Agenda Number 2.



**Review of CAP Energy Needs**

Power Task Force  
March 16, 2017

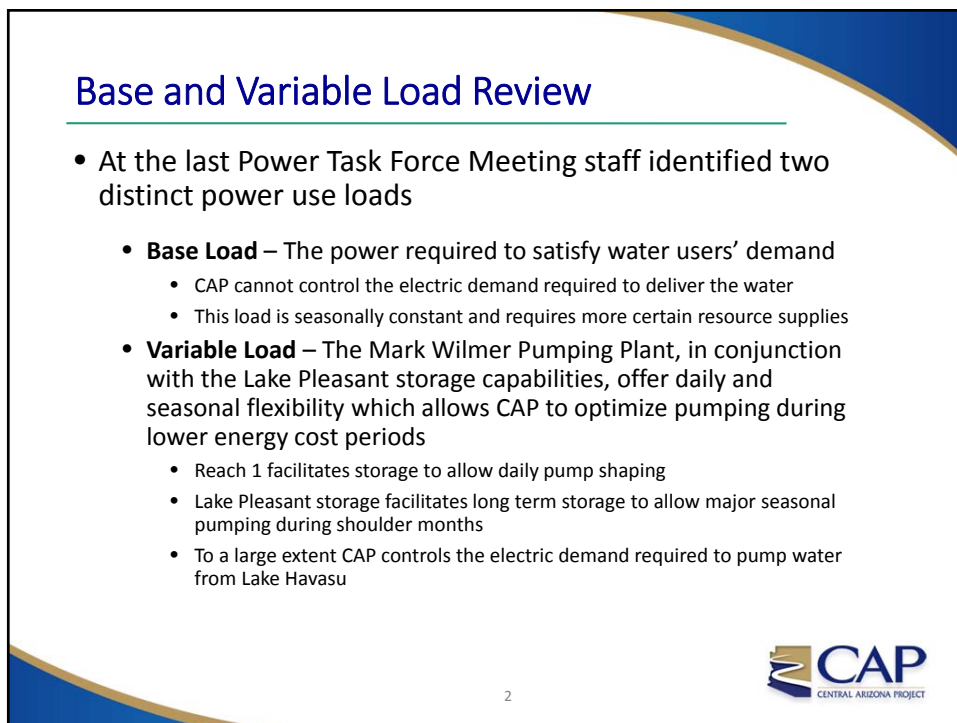
Brian Young

**PROTECT LAKE MEAD**

**CAP**  
CENTRAL ARIZONA PROJECT

YOUR WATER. YOUR FUTURE.

The slide features a background image of a reservoir in a desert landscape with mountains in the distance. A blue curved graphic element is on the left side.



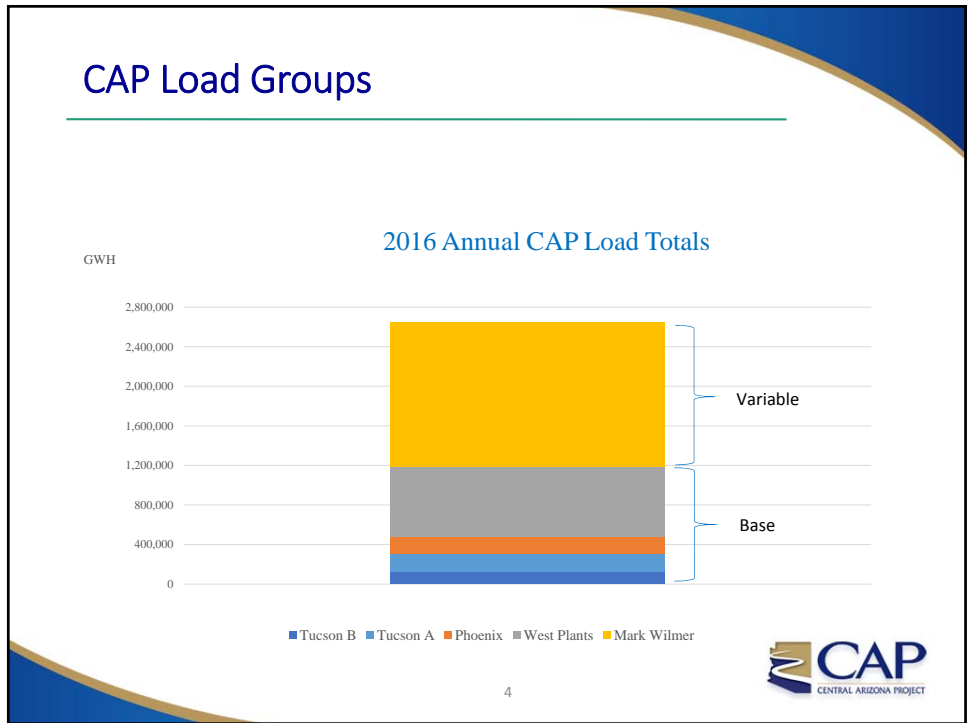
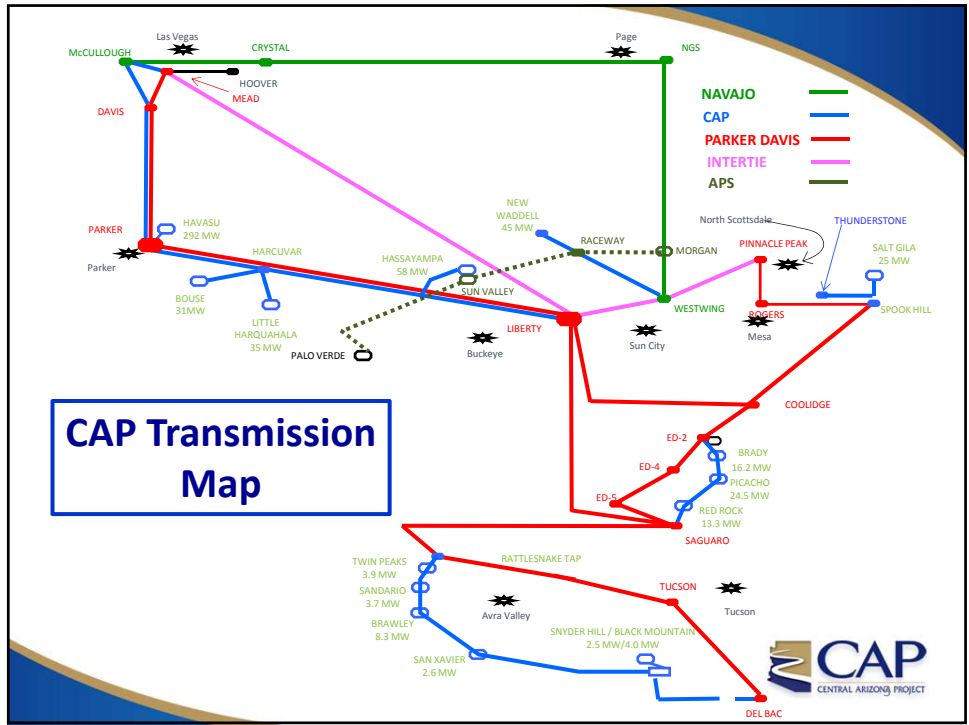
**Base and Variable Load Review**

- At the last Power Task Force Meeting staff identified two distinct power use loads
  - **Base Load** – The power required to satisfy water users’ demand
    - CAP cannot control the electric demand required to deliver the water
    - This load is seasonally constant and requires more certain resource supplies
  - **Variable Load** – The Mark Wilmer Pumping Plant, in conjunction with the Lake Pleasant storage capabilities, offer daily and seasonal flexibility which allows CAP to optimize pumping during lower energy cost periods
    - Reach 1 facilitates storage to allow daily pump shaping
    - Lake Pleasant storage facilitates long term storage to allow major seasonal pumping during shoulder months
    - To a large extent CAP controls the electric demand required to pump water from Lake Havasu

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The slide has a white background with a blue curved graphic element at the top and bottom.



## Energy Supply for Base Load

- Base Load energy is required for water deliveries in almost all hours of the year and is largely not able to be adjusted based on energy prices
- Base Load energy largely reflects average energy pricing in market indices and major market influences such as natural gas prices

*Base Load energy is therefore usually supplied by forward purchased resources and longer terms to achieve price stability and limit risk*

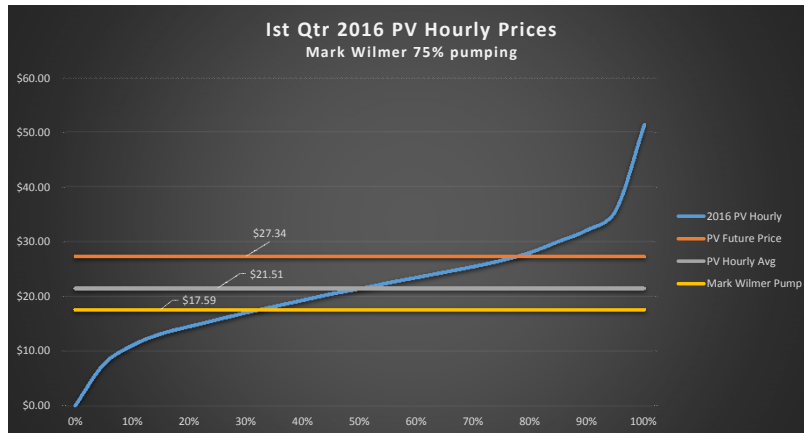
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## Variable Load Pricing 2016 Analysis



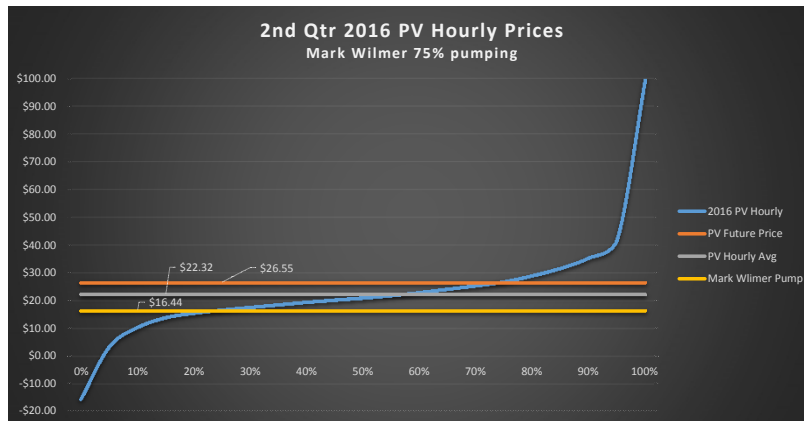
## Q1 2016 Energy Pricing



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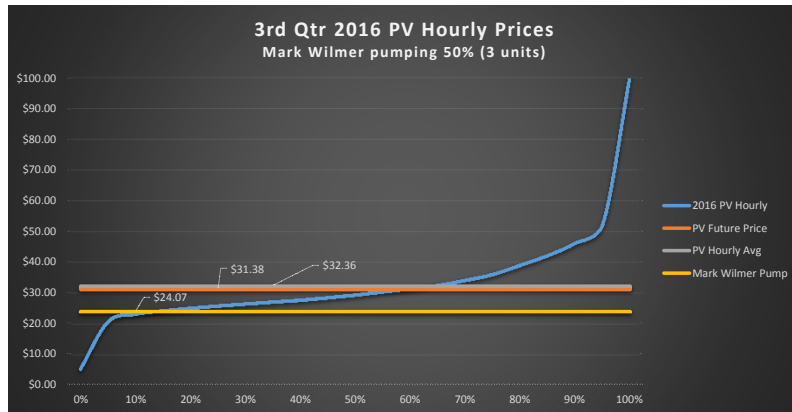
## Q2 2016 Energy Pricing



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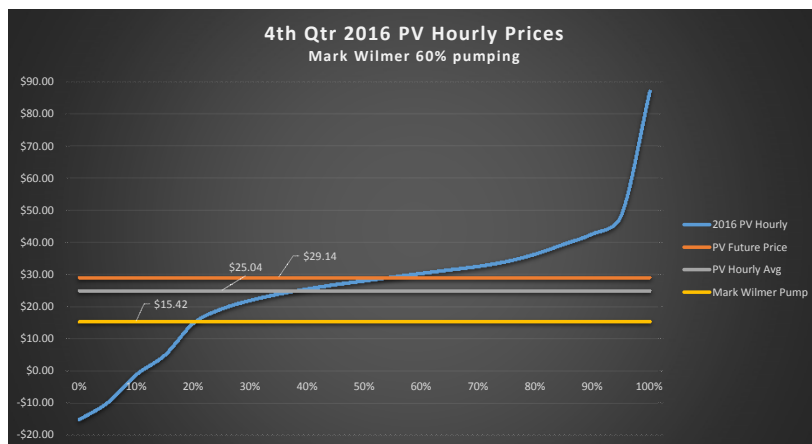
## Q3 2016 Energy Pricing



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## Q4 2016 Energy Pricing



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## Energy Supply for Variable Load

How is use of variable loads optimized?

- Energy products need to be extremely flexible or tailored to match load schedule
- Do not want to be paying for energy or fixed costs in times when energy is not needed

Prices are not closely tied to movements in natural gas pricing

*This is best achieved by spot market purchases which may be supplemented by short-term products when economic*

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## Questions?



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