

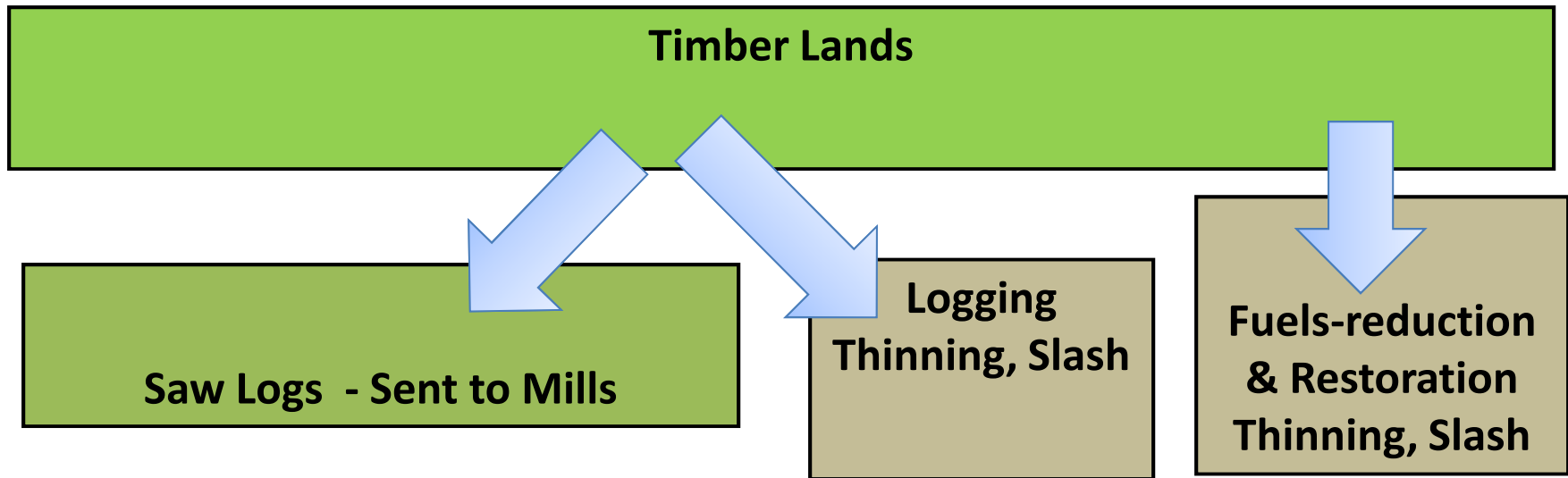
# **Humboldt Redwood Company Power Purchase Agreement**

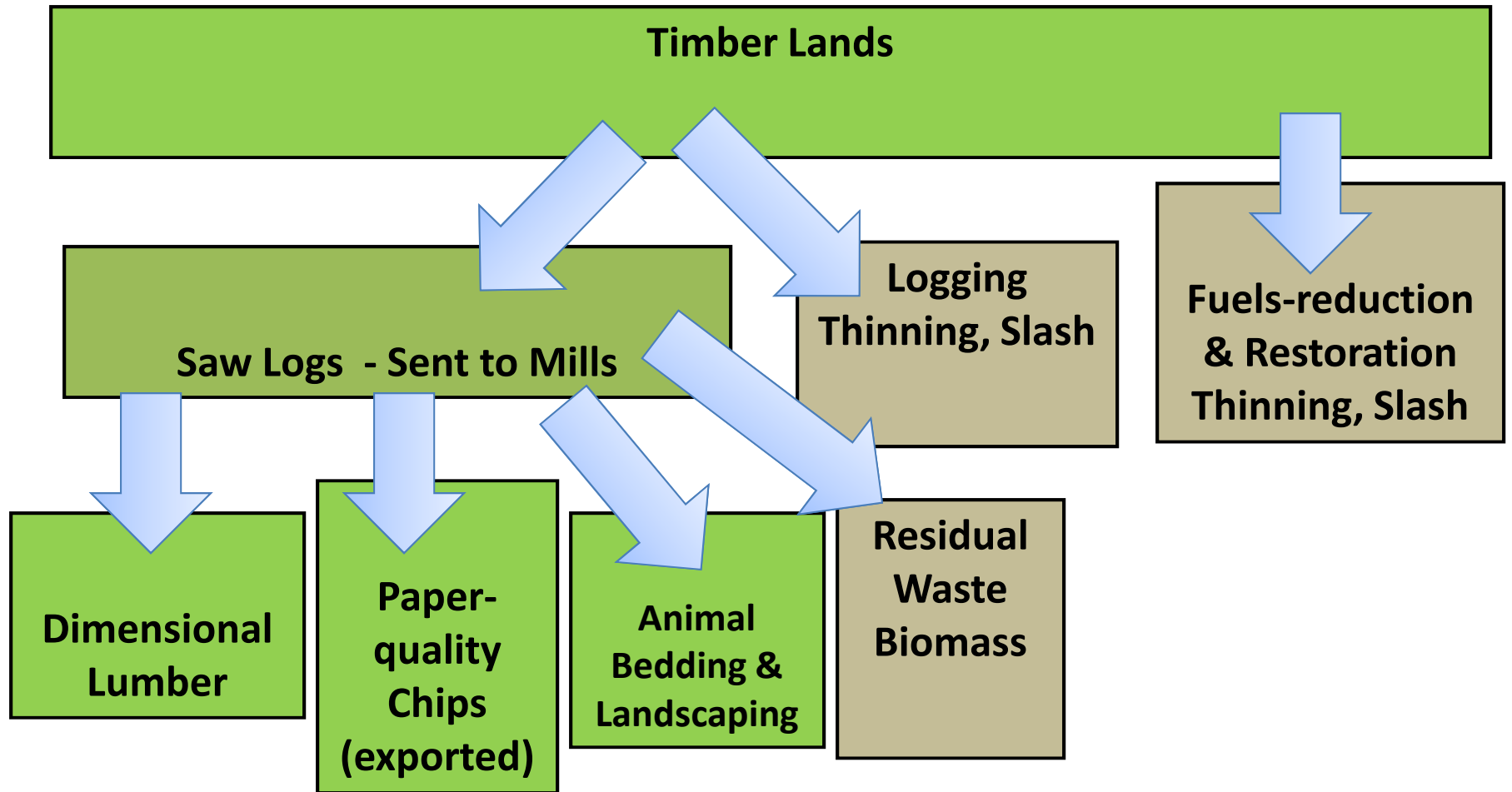
**March 20, 2017**

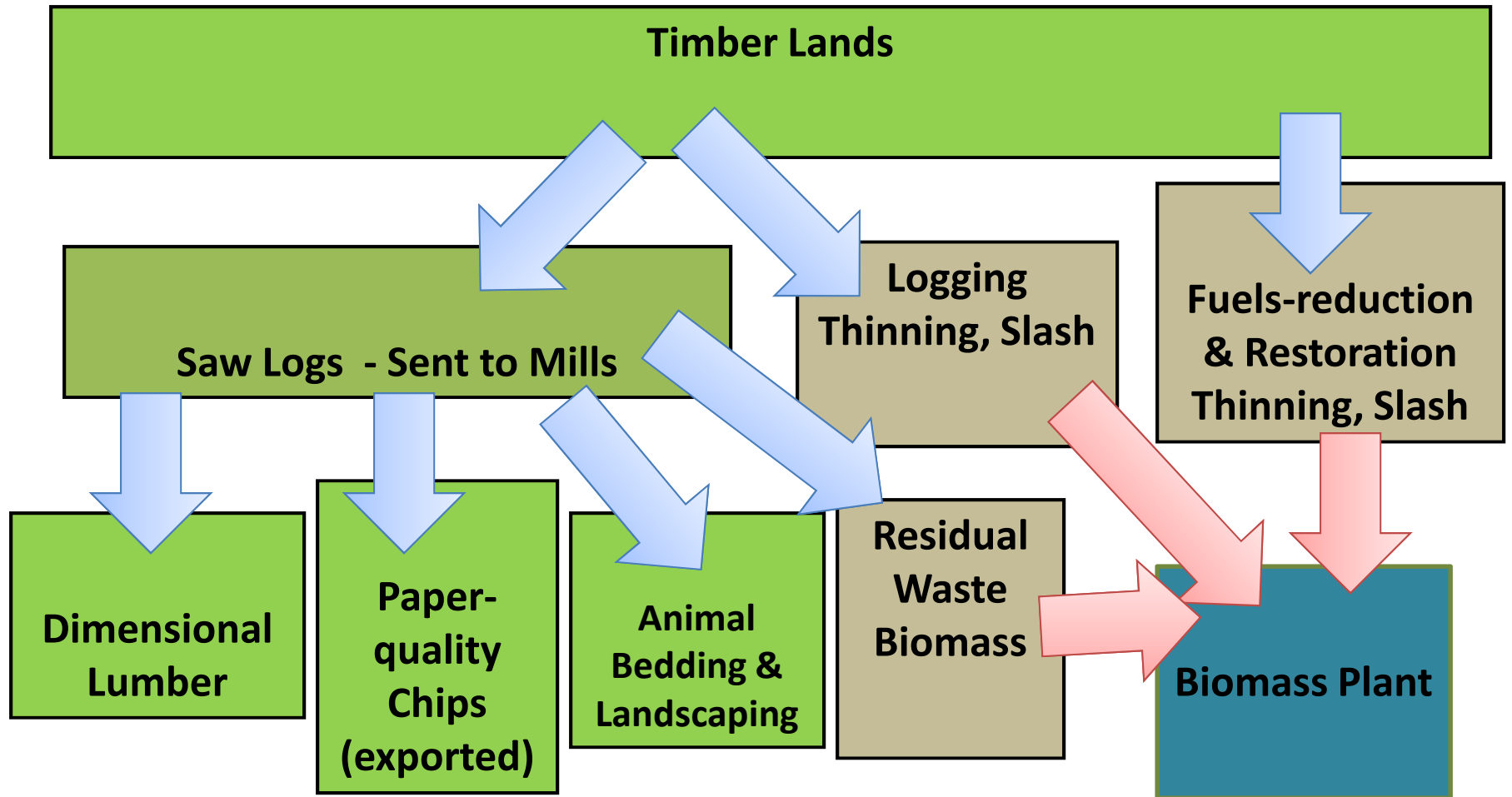


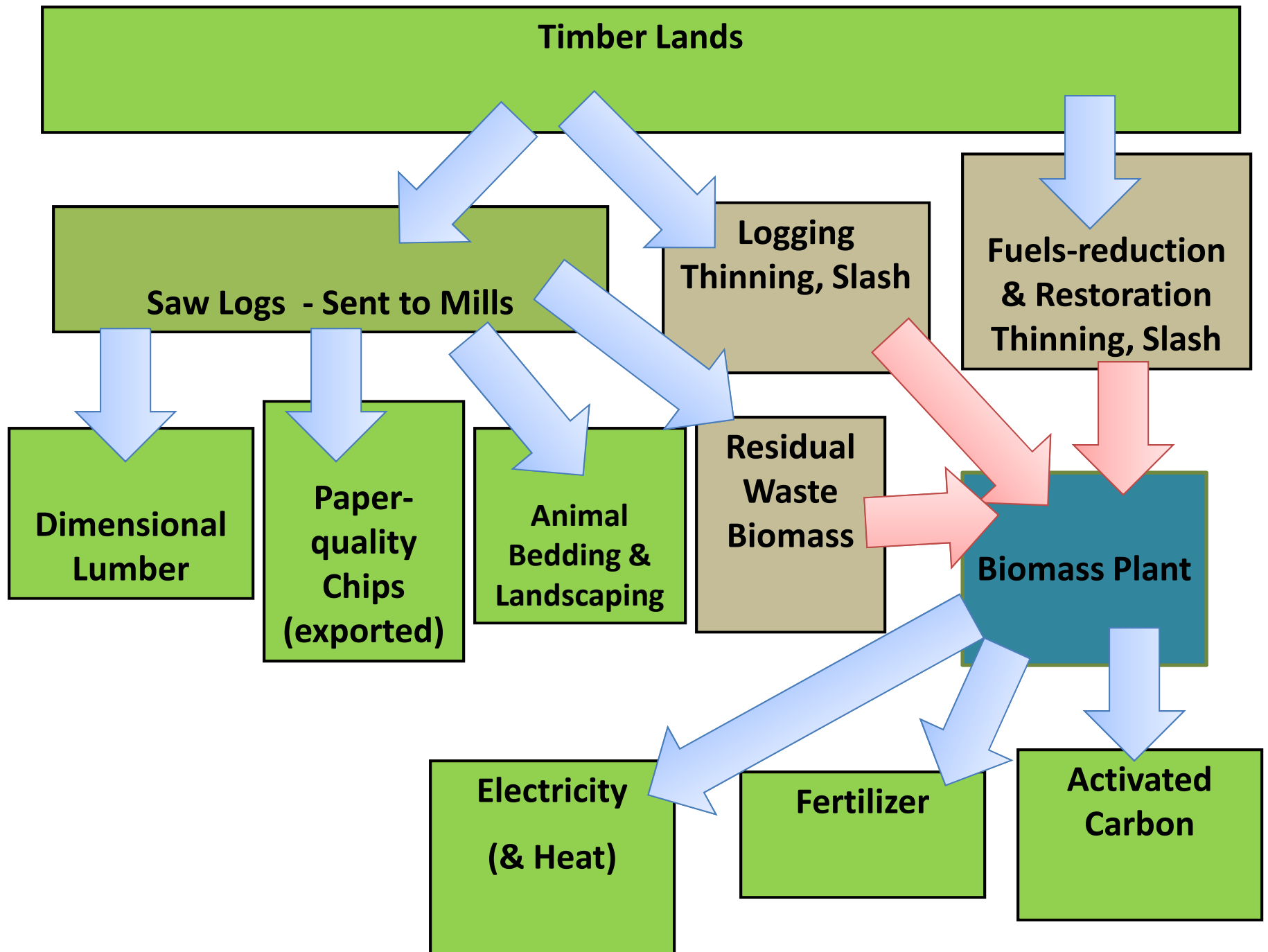
# Board-adopted Guidelines for Biomass Procurement

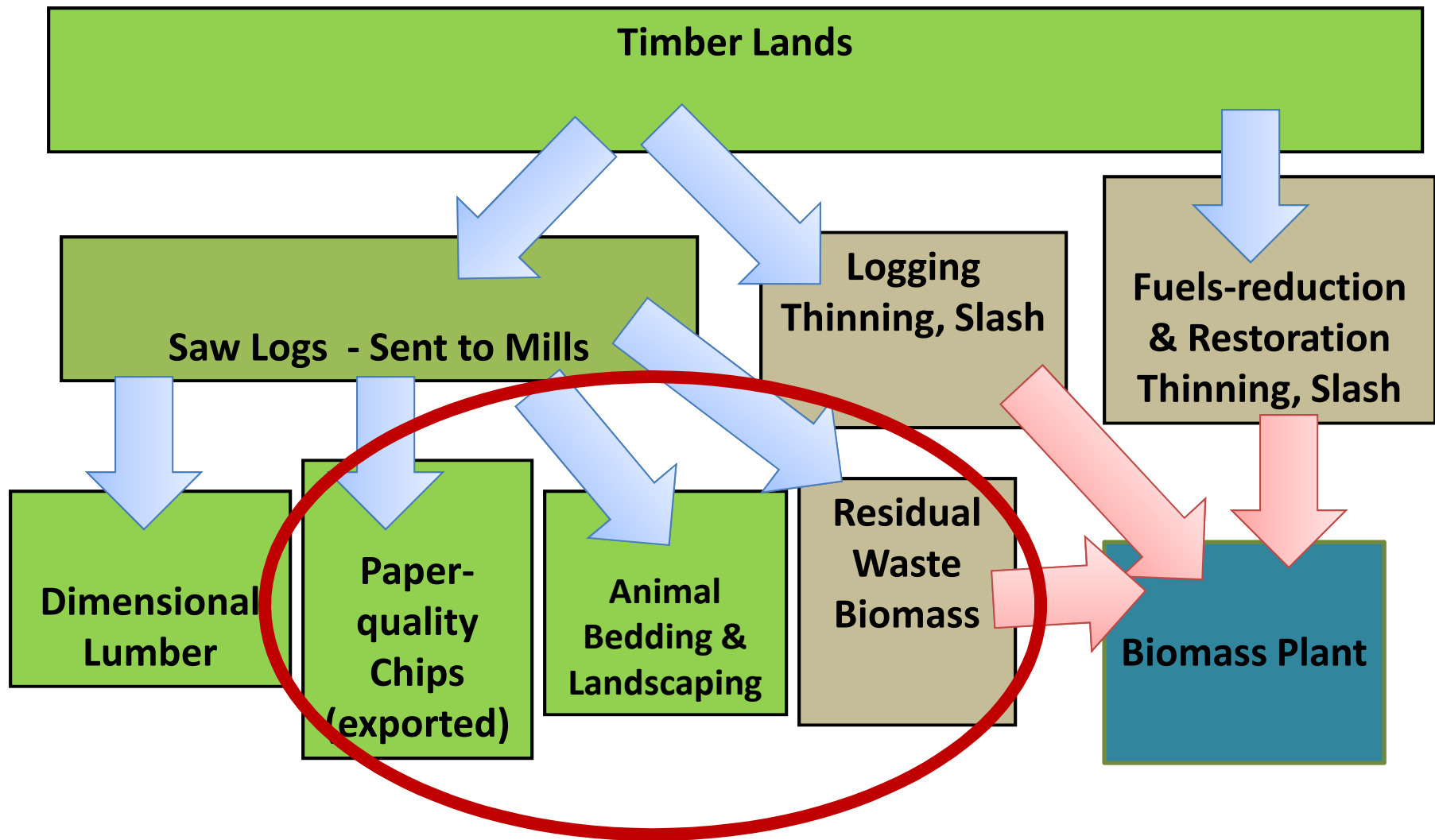
1. Issue a Request for Offers targeting power purchase agreements with **1-2 existing facilities**.
2. Structure overall biomass procurement strategy around **local waste-management** and forest restoration priorities and needs.
3. Include **environmental, community, and economic considerations** in selection process.
4. Contingent on price and market conditions, contract for a **target of around 20MW** of local biomass energy.



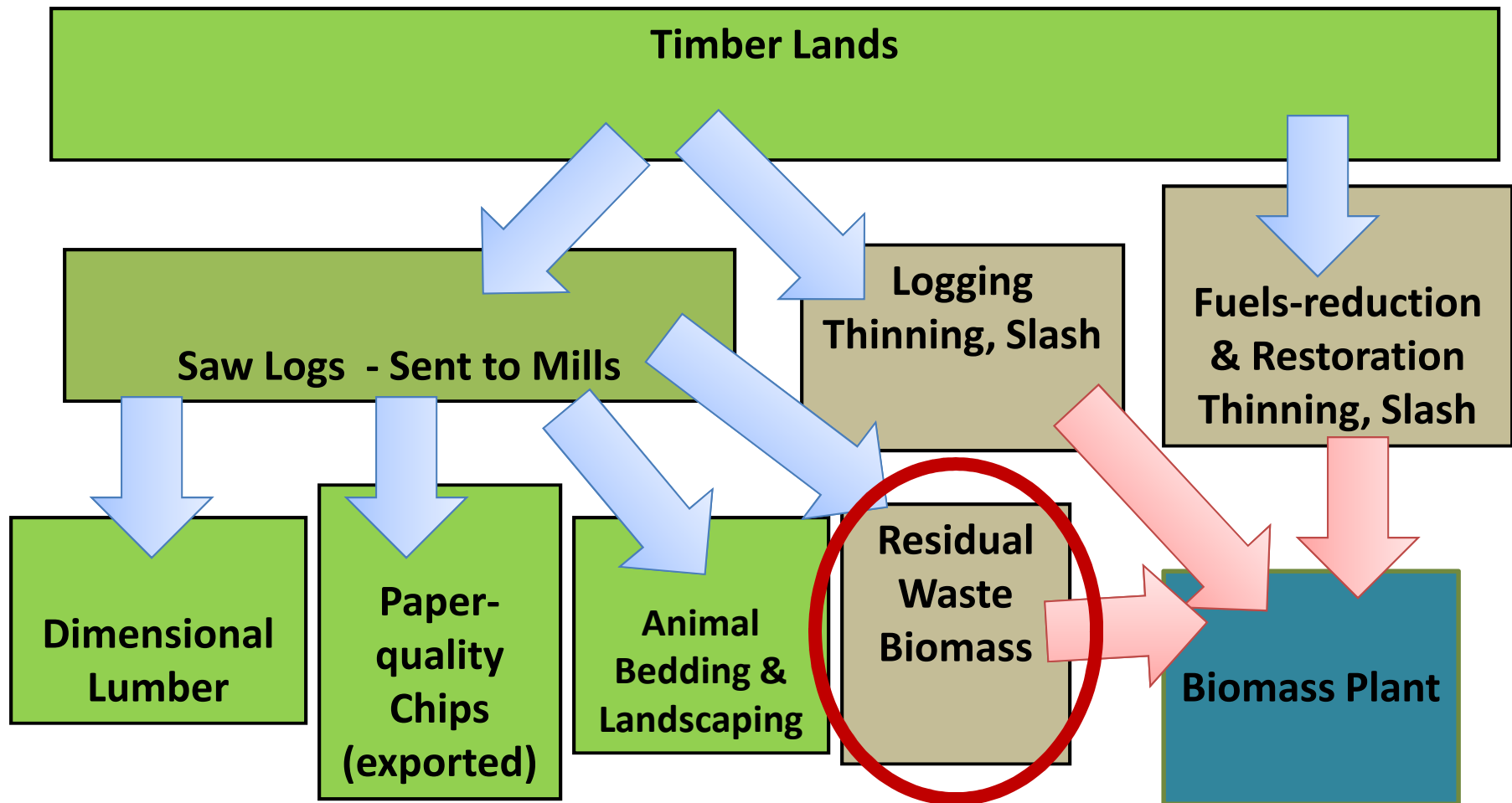






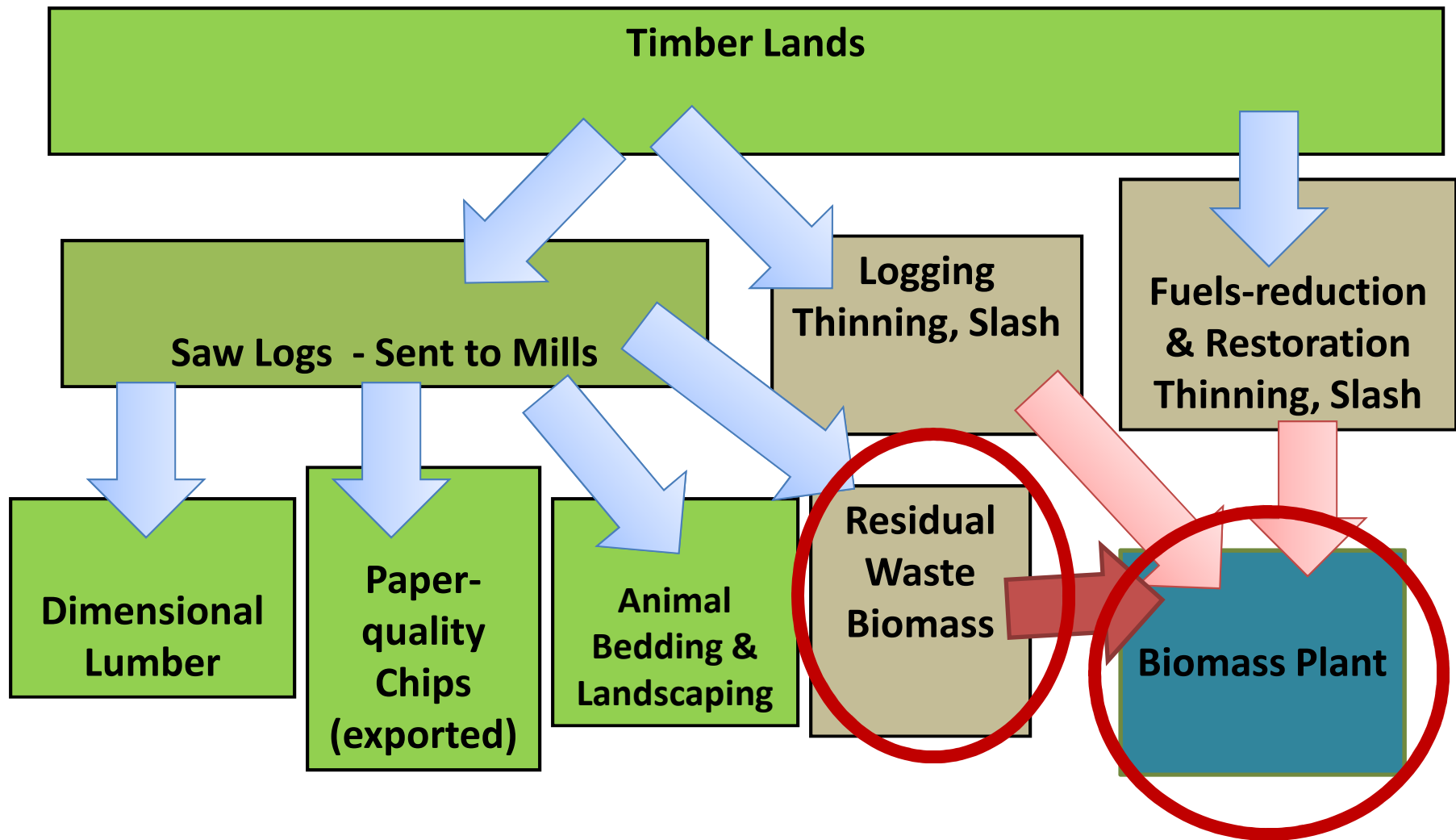


**Total Humboldt County mill  
residuals = ~400,000 Bone dry tons**



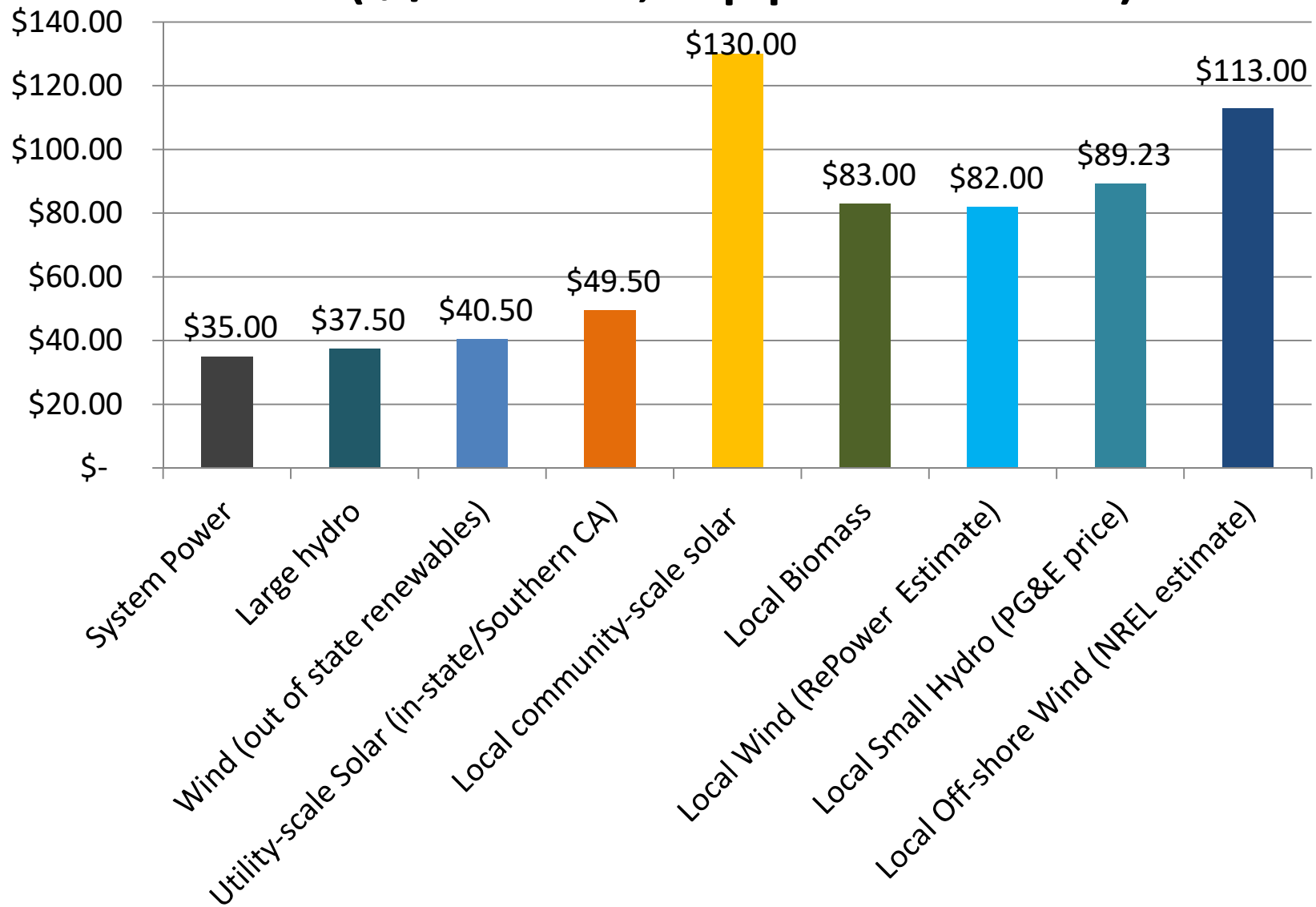
**~50% of residuals typically sold for other uses, leaving ~200,000+ BDT**





**Processing 200,000 BDT requires about 25MW of operating power plant capacity**

# Current or projected wholesale power costs (\$/MWh, approximate)



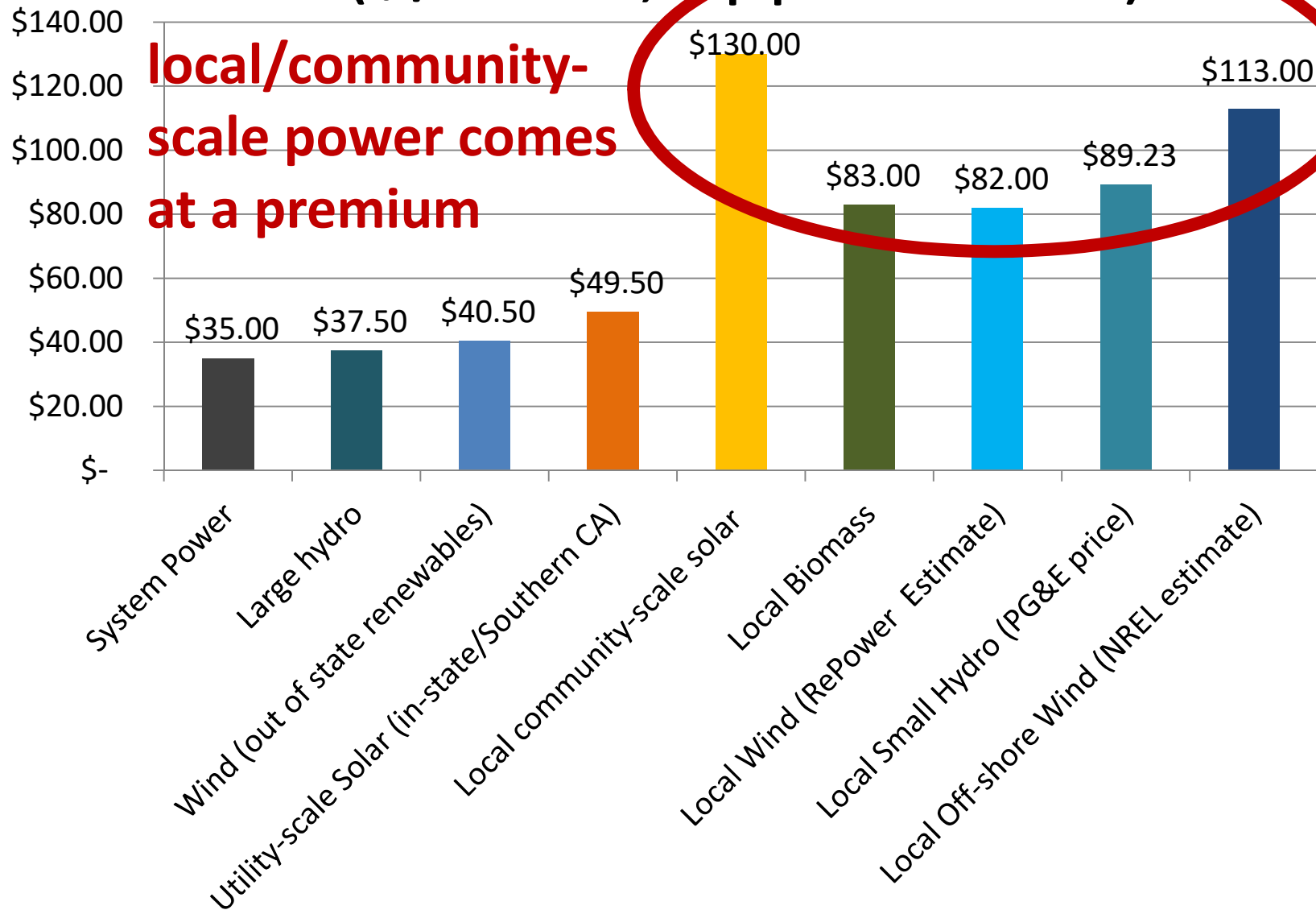
# Current or projected wholesale power costs (\$/MWh, approximate)



Market prices = big projects



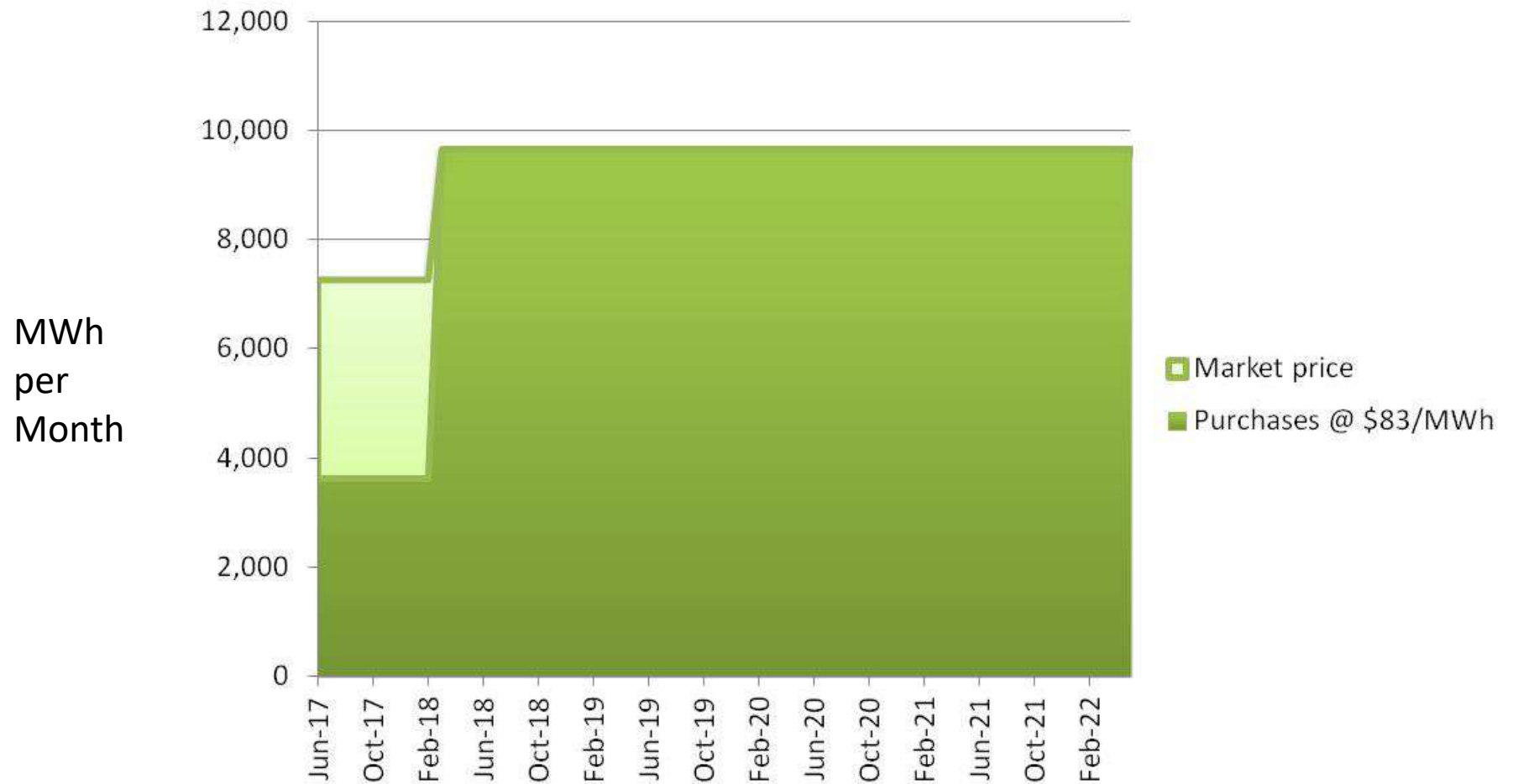
# Current or projected wholesale power costs (\$/MWh, approximate)



# Humboldt Redwood Company PPAs

- \$83/MWh bid price, 5-year contract period
- 9 month-term initial PPA at reduce volume for \$83, additional generation at market price
- 51-month term at \$83 for full volume
  - Includes “Material Change” clause to reduce RCEA risk exposure for multi-year commitment to above-market pricing.
- Environmental & regulatory compliance provisions

# Humboldt Redwood Company PPAs



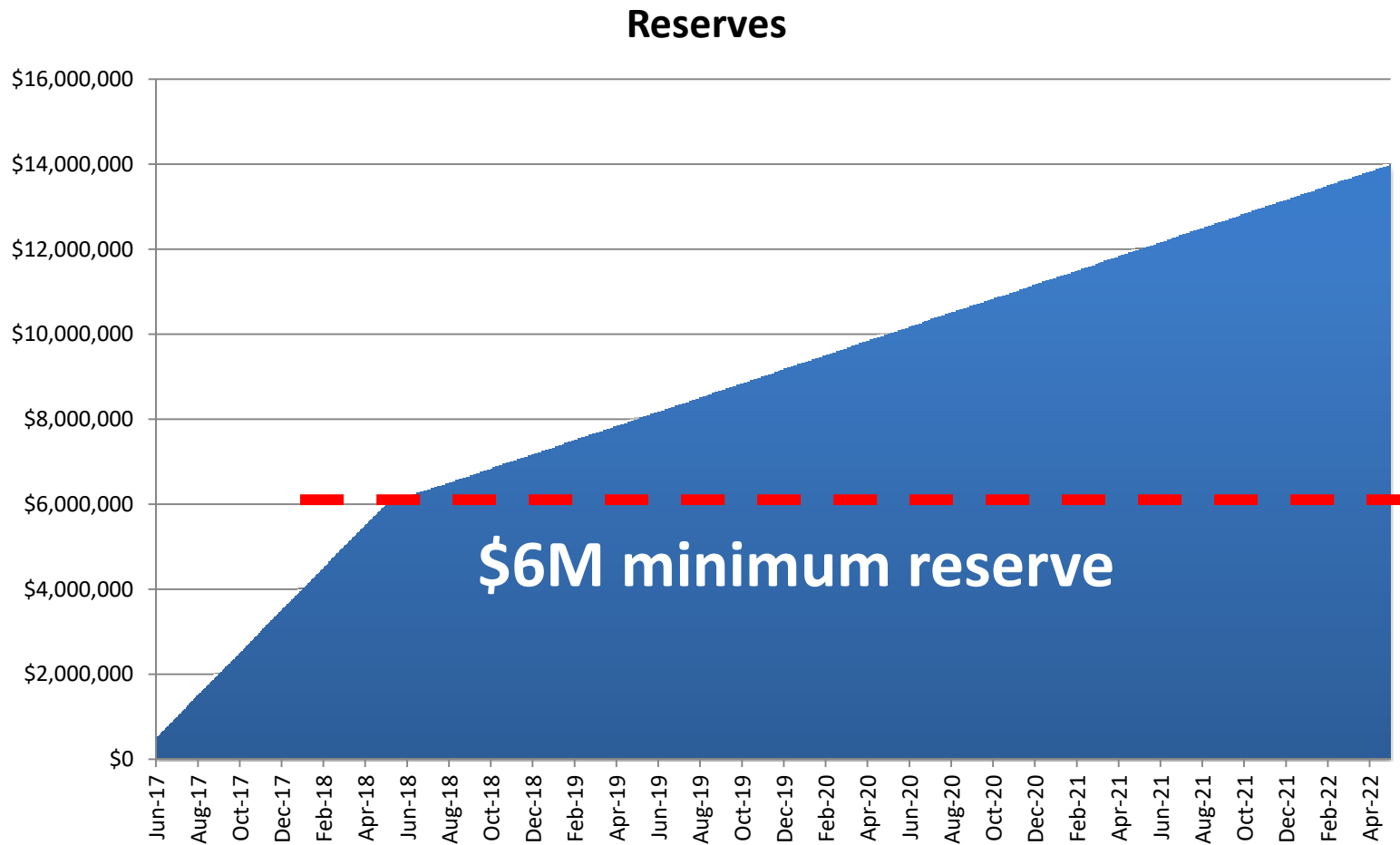
# Material Change Policy Elements

Creates opportunity to renegotiate if:

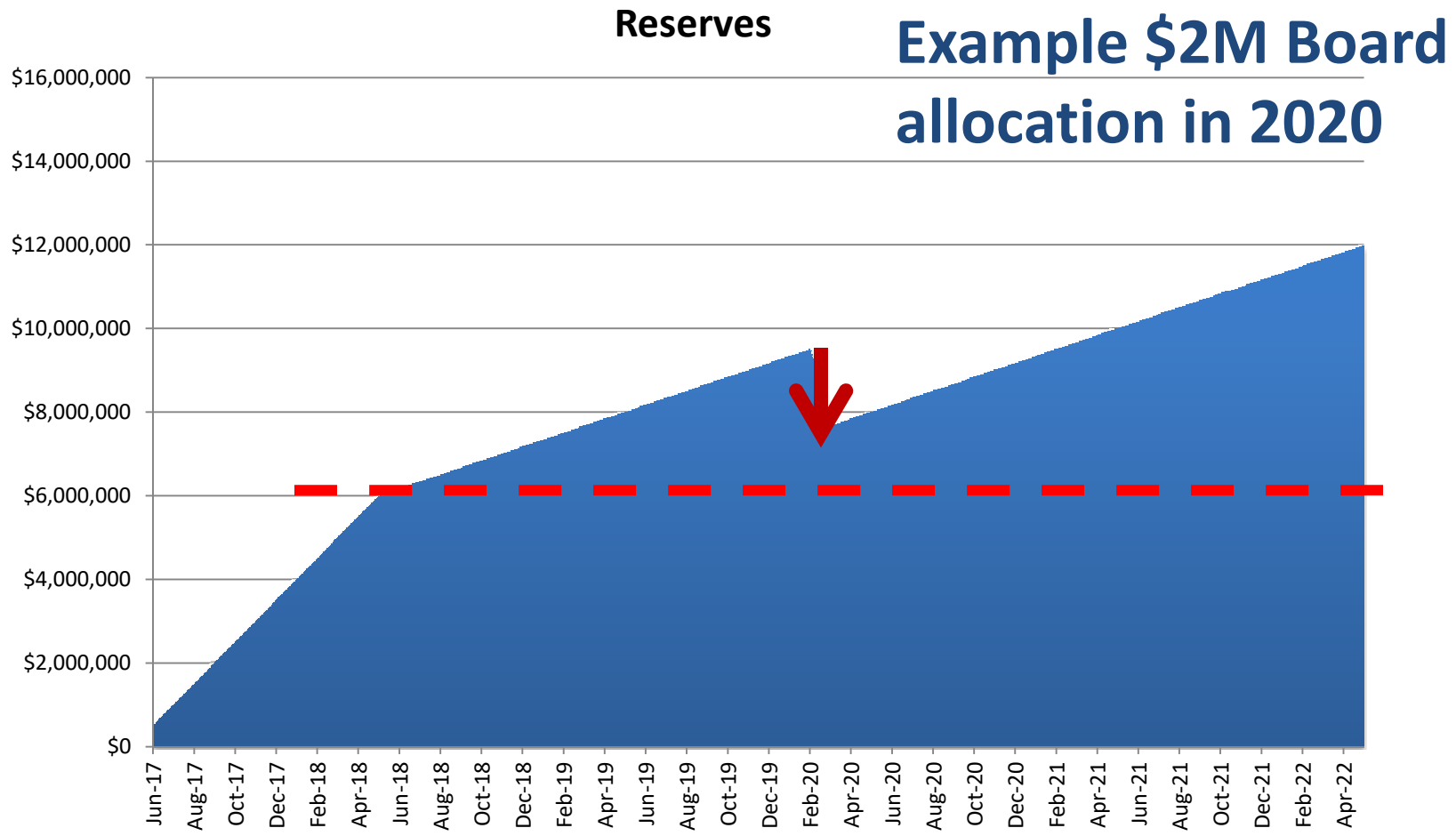
1. RCEA forecasts for the coming year show that we won't be able
  - Maintain 3% customer rate savings (~\$2M/yr)
  - Meet minimum power portfolio requirements and operating costs
  - Reserve accumulation of \$2M/yr
2. Customer participation levels are not met



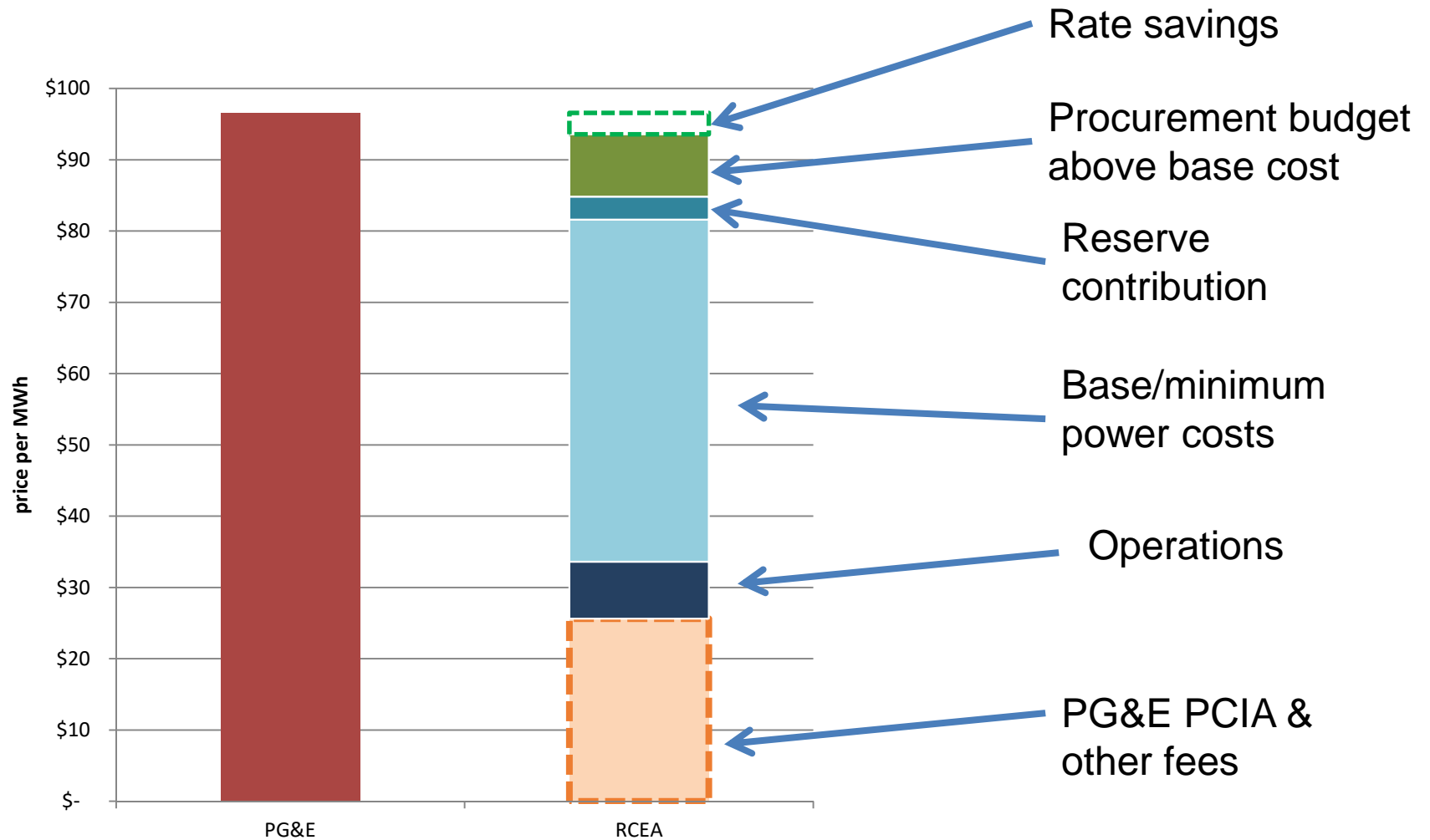
# Reserve accumulation



# Reserve accumulation

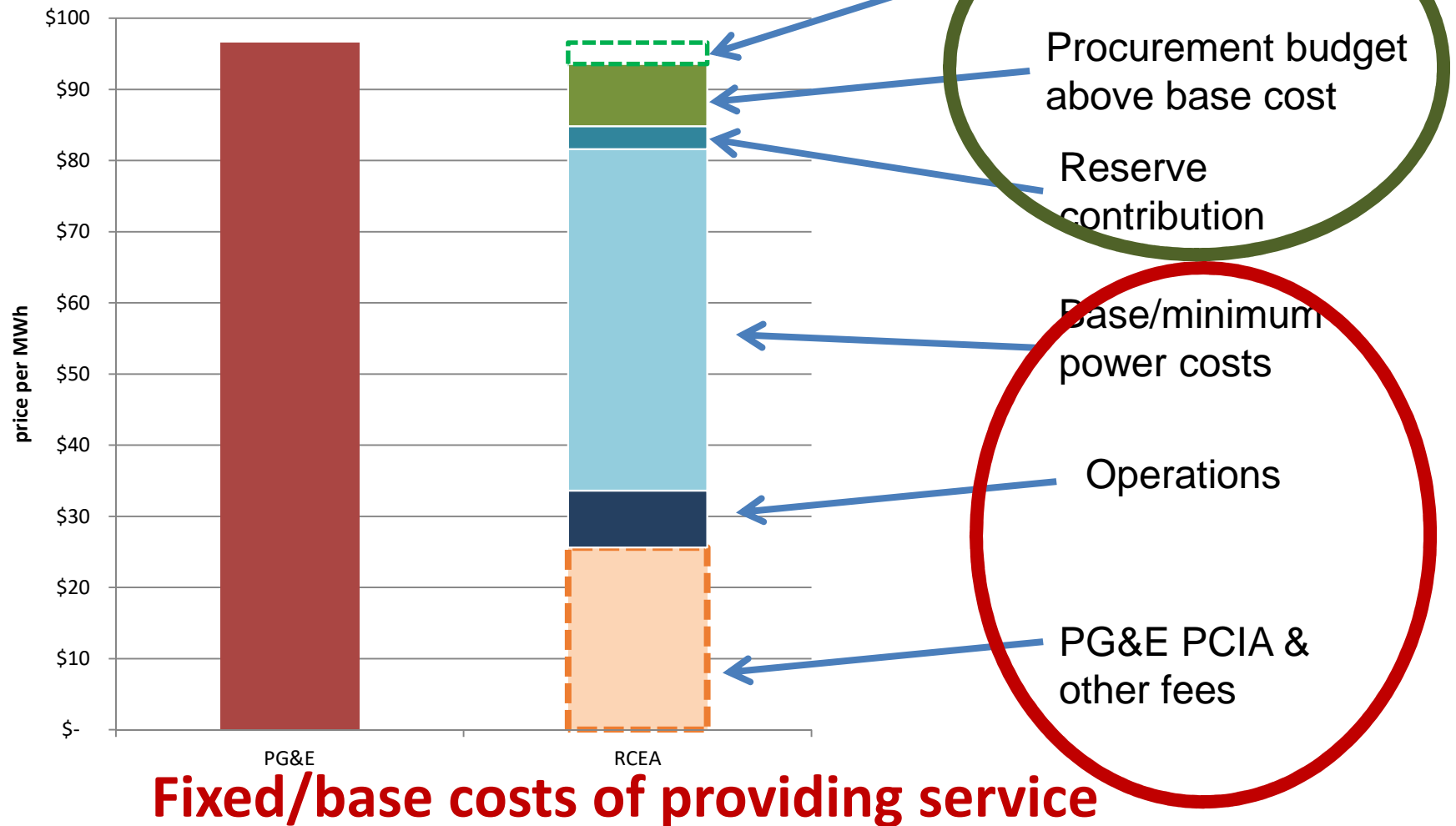


# Future-year Budget Headroom

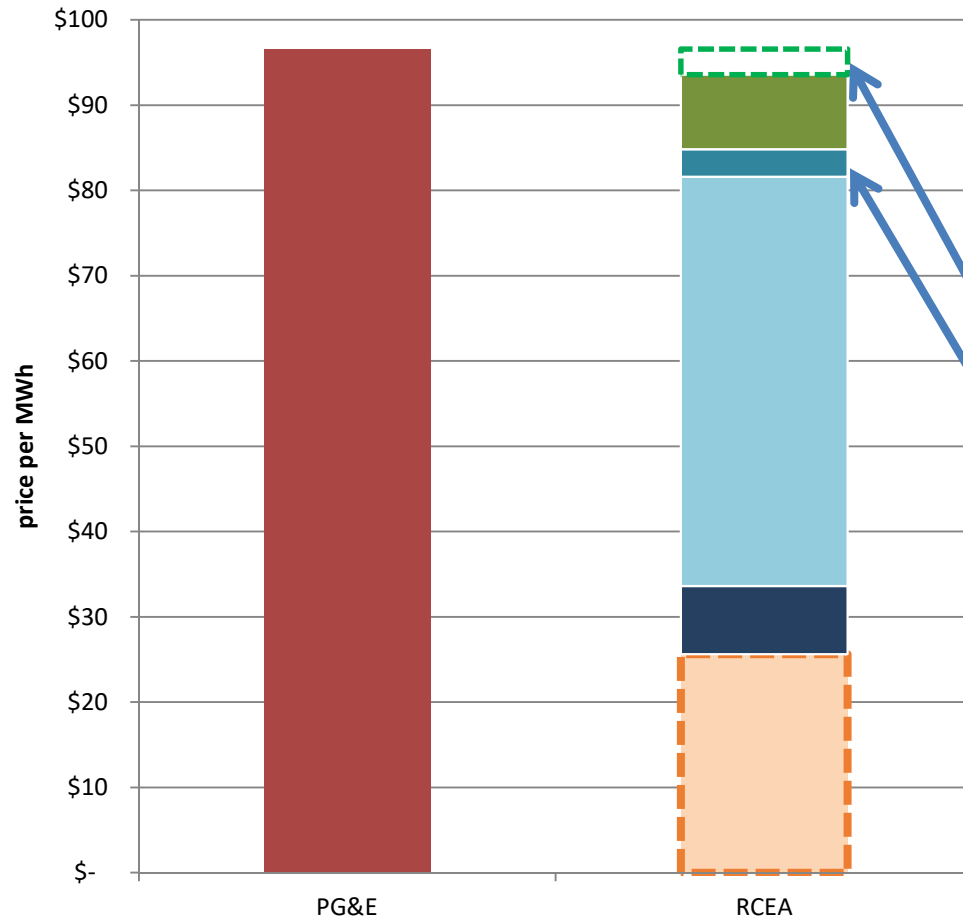


# Future-year Budget Headroom

## Costs determined by Board Policy



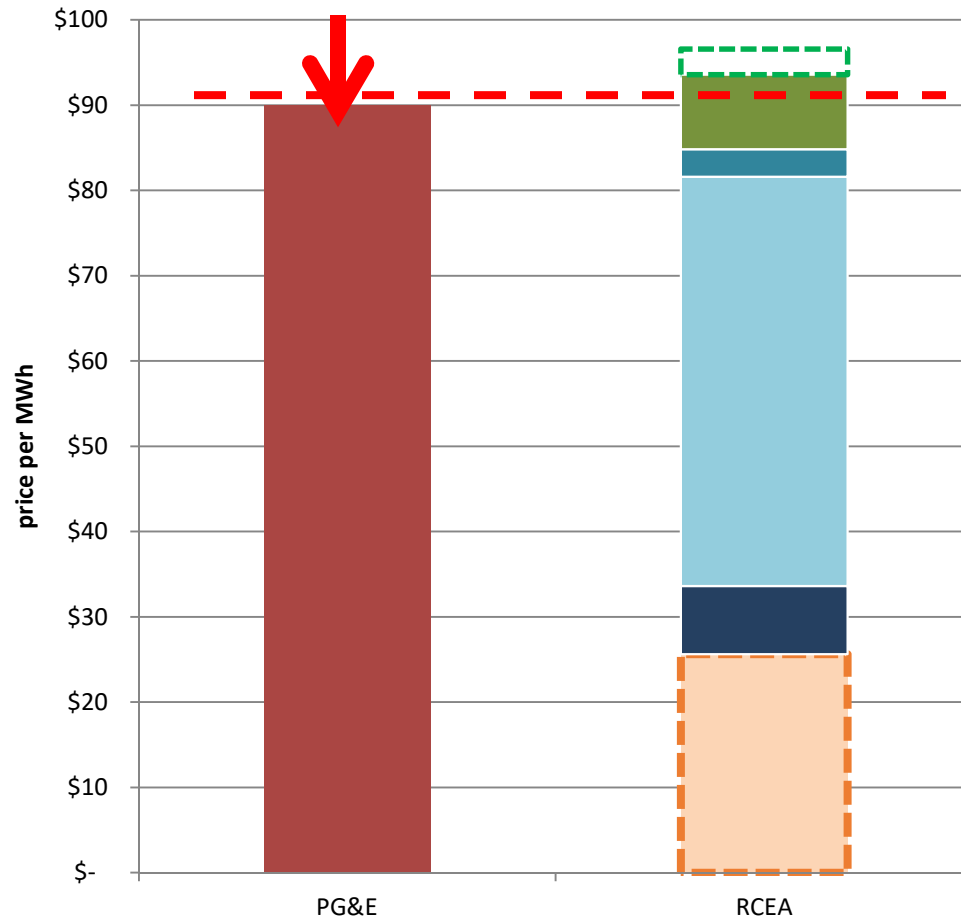
# Future-year Budget Headroom



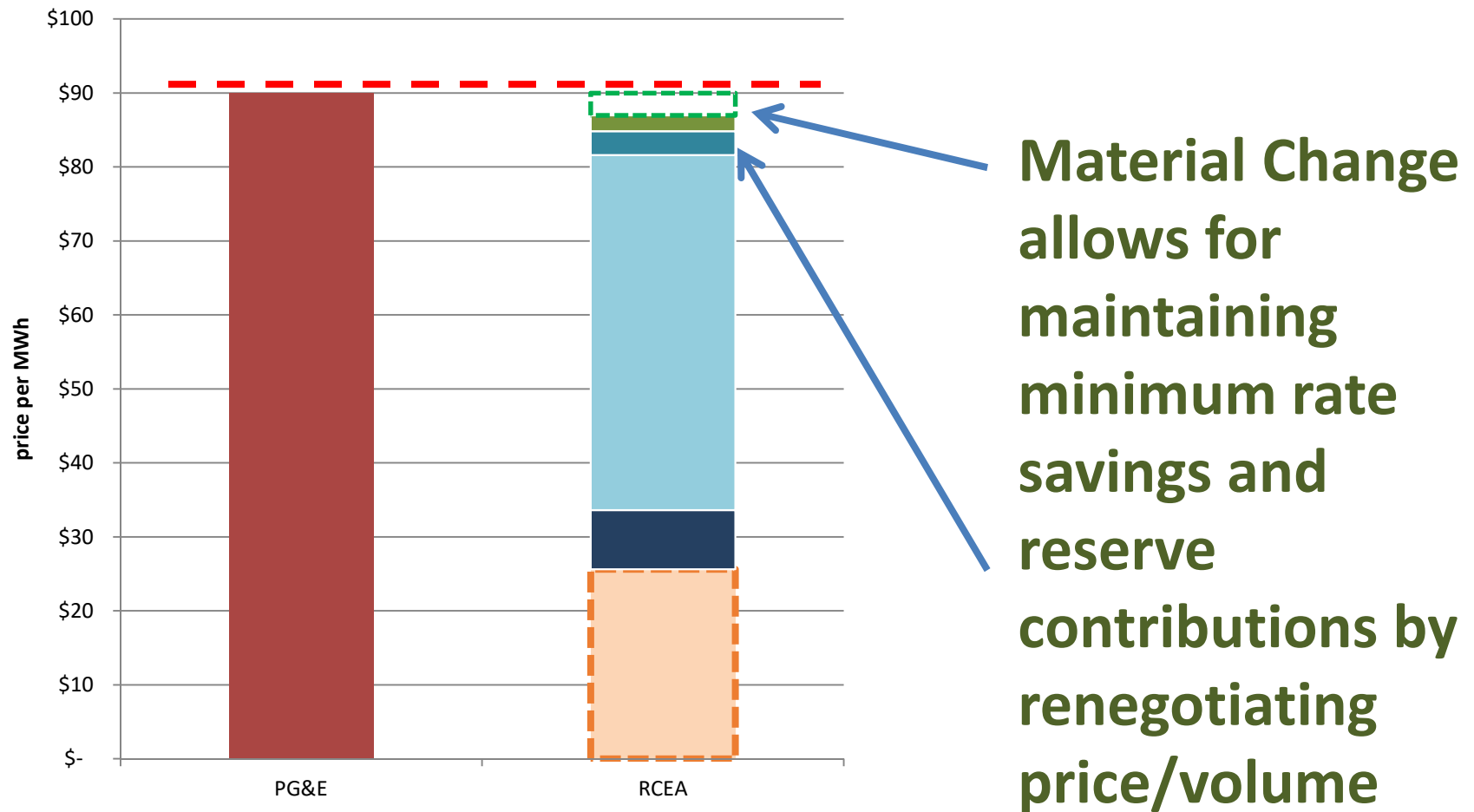
**Material Change Clause ensures base operating costs met and also sets minimum values for reserves and rate savings**

# Future-year Budget Headroom

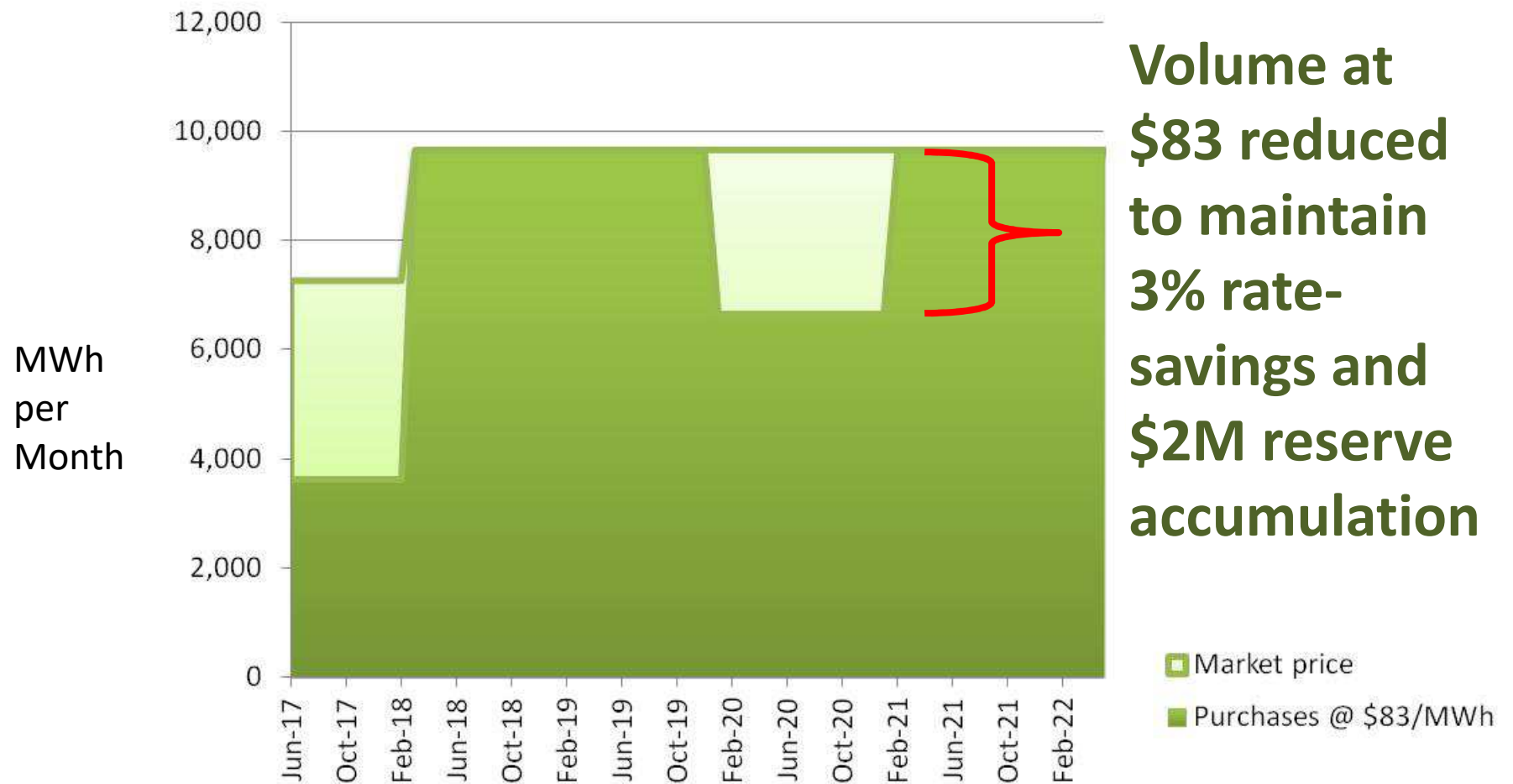
## Example: PG&E Rate decrease



# Future-year Budget Headroom



# Humboldt Redwood Company PPAs





# Environmental/regulatory compliance provisions

Questions?





# Biomass Procurement Phase 2



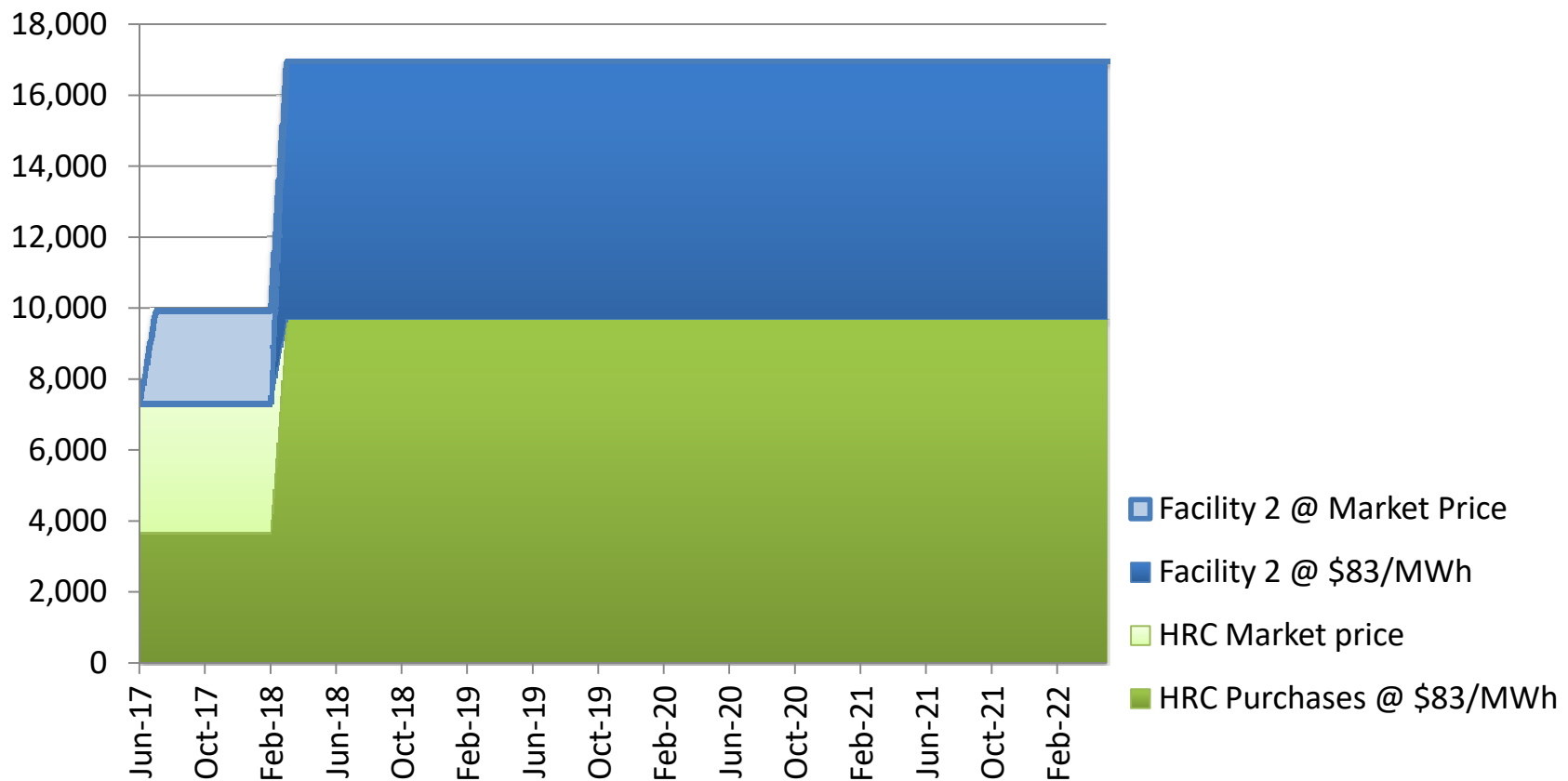
# **Proposed terms for additional biomass procurement**

- Additional contract(s) layered on after HRC for available budget
- Base price would be \$83/MWh
- PPA terms would be modified version of HRC PPAs Including adjusted version of Material Change clause

# Options

1. Pursue negotiations with one additional facility
2. Pursue negotiations with both, with one ranked ahead of the other for allocations of available headroom
3. Pursue negotiations with both, split any headroom equally

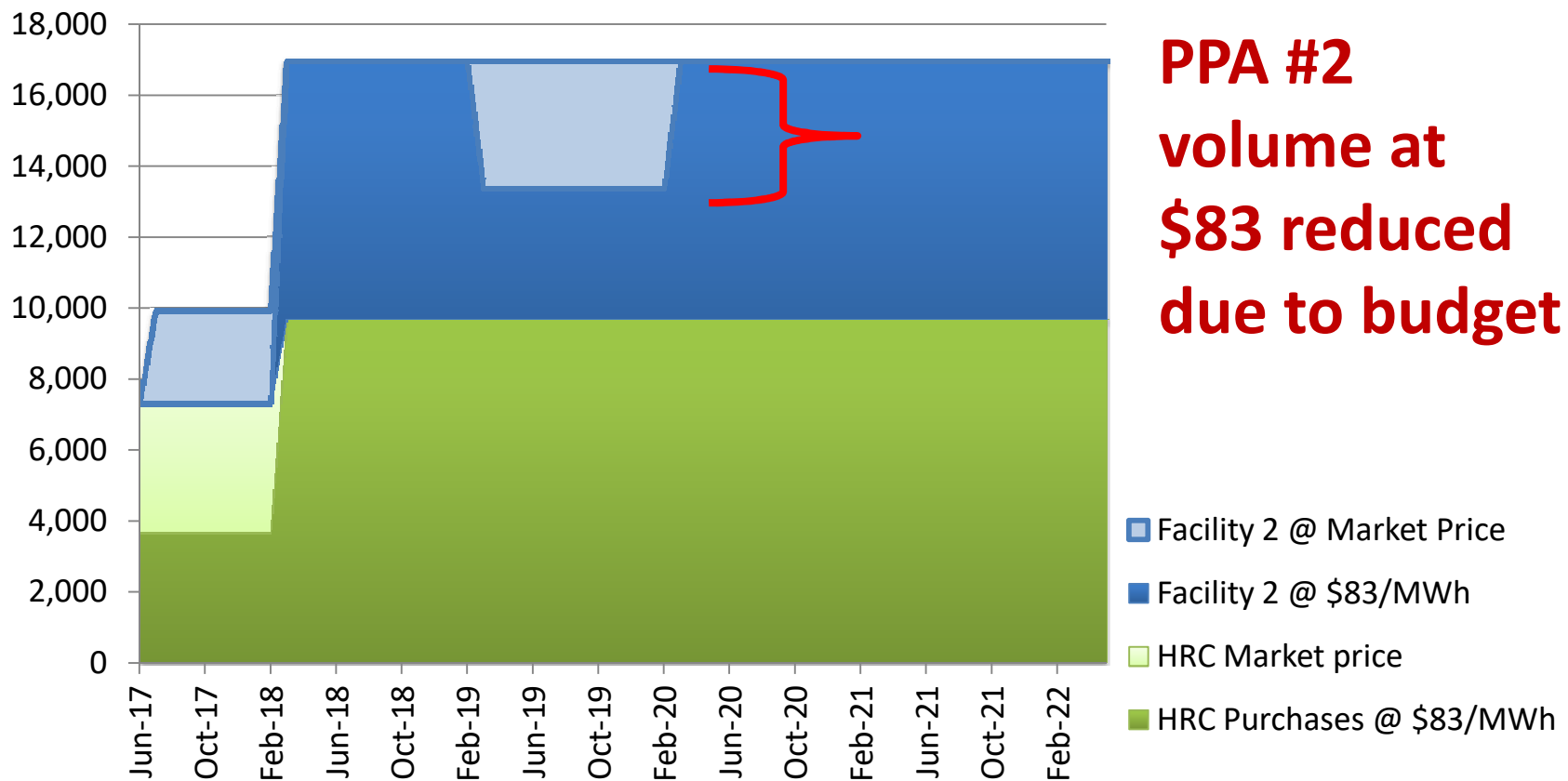
# Additional PPA(s) layered onto HRC





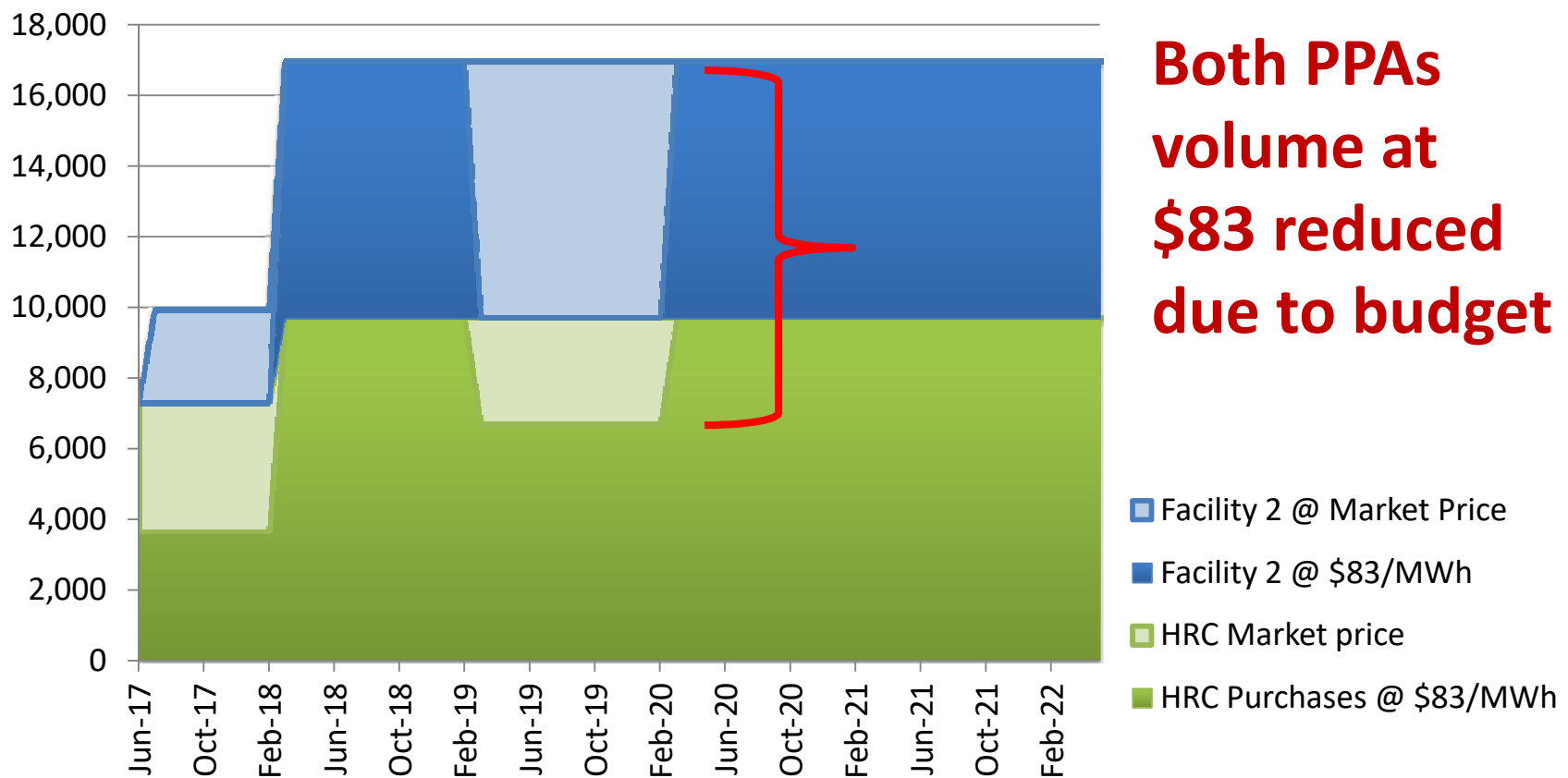
# Additional PPA(s) layered onto HRC

**Example: budget moderately constrained**



# Additional PPA(s) layered onto HRC

## Example 2: budget significantly constrained



# Considerations

- Technical analysis/forecasts do not project being able to afford 3 biomass PPAs at \$83/MWh
- Preliminary analysis suggests the capacity provided by two operational facilities would be sufficient to process currently-available biomass waste stream.
- The more budget committed to biomass = less available for other priorities (customer programs, new local generation, lowering power mix GHG emissions)



# Staff recommendation

- Pursue negotiations with one additional facility
- Select DG Fairhaven for negotiation base on RFO review team's "offeror viability" scoring.

