Paired Retirement Election Concept

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Taking a step back – What is the region trying to do?

- Facilitate entry of state policy resources

- Facilitate transition from resources with high carbon emission contributions to less carbon intense fleet

- Avoid disruption to competitive market prices

- Minimize the creation of surplus

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Taking a step back – What realities does it face?

- Differences between states' policies

- State-level procurement

- Absent efficient exit signals (and mechanisms), state policy resource(s) entry will increase market surplus

# New Concept: Paired Retirement Election

- Step 1: Conduct Forward Capacity Auction (FCA) as currently designed

- Step 2 (new): Post-Descending Clock Auction (DCA) step – Opportunity to accelerate existing resource retirement to accept state policy resource:

    - Match state policy resource New Capacity megawatts that did not get a Capacity Supply Obligation (CSO) with priced retirement bids that did.

    - If such retirement bid price(s) exceed the level of the *unmitigated* New Capacity offer price request of state policy resource(s), the existing resource retirement bid(s) is accepted and its CSO is transferred to the state policy resource

    - Retiring resource paid its lost opportunity cost (*See slide 8*)

    - State policy resource receives FCA clearing price net of above payment to retiring resource(s)

- Additional Step? (*See slide 8*)

    - Payment to retiring resource and adjustment to state policy resource capacity payments in subsequent FCA(s)?

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Example #1: Perfect Paired Retirement Election

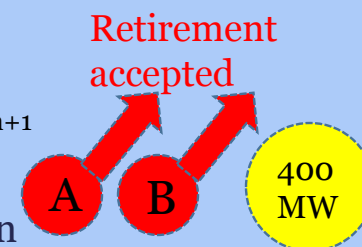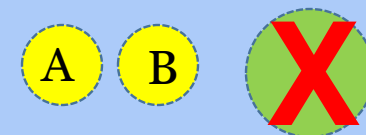- Step 1: FCA clears at $8/kw-month
  - 400MW existing resource at priced retirement bid of $5/kw-mo.
  - 400MW state policy resource requested to bid as low as $4/kw-mo (but mitigated to $10/kw-month).

- Step 2 : Post-DCA step
  - Existing resource $5/kw-month priced retirement bid accepted and is paid lost opportunity cost of $8 − 5 or $3/kw-month.
  - State policy resource obtains 400MW CSO and becomes existing in FCA_{n+1}
  - State policy resource gets $8 − 3 or $5/kw-month for CP_n

400 MW

400 MW

400 MW

400 MW

Retirement accepted

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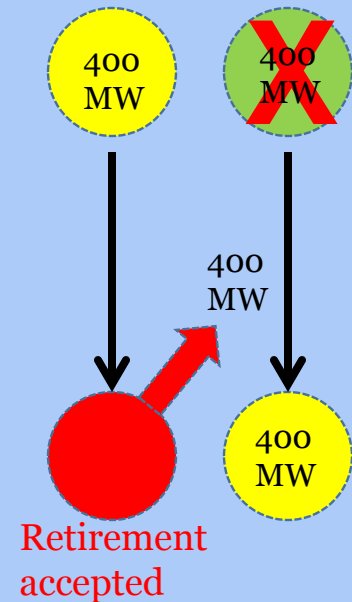
Example #2 – Lumpy Paired Retirement

- Step 1: FCA clears at $8/kw-month
  - Several existing resource with uncleared priced retirement bids
    - Unit A - 200 MW at $7/kw-month
    - Unit B - 250 MW at $6/kw-month
  - 400MW state policy resource requested to bid as low as $4/kw-month

A B X

- Step 2 : Post-DCA step
  - Priced retirement bids of Unit's A, B & C accepted.
  - State policy resource obtains 400MW CSO and becomes existing in FCA_{n+1}
  - Retiring resources paid their lost opportunity cost:
    - Unit A – 200MW at $8 – 7 or $1/kw-mo. * 100 * 12,000 = $1.2 million
    - Unit B – 250MW at $8 – 6 or $2/kw-mo. * 200 * 12,000 = $4.8 million
  - State policy resource paid $8 /kw-mo * 400*12,000 – $6M or $6.75/kw-mo.
  - 50MW residual supply need purchased in ARA3, as necessary
  - 50MW carry-forward to support additional state policy resources in FCAn+1

Retirement accepted

A B 400 MW

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Example #3 – Incomplete Paired Retirement

- Step 1: FCA clears at $8/kw-month
  - Several existing resource with uncleared priced retirement bids
    - Unit A - 250 MW at $7/kw-month
    - Unit B - 200 MW at $6/kw-month
  - 500MW state policy resource which requested to bid as low as $4/kw-month
- Step 2: Post DCA-step (if partial clearing not accepted by state policy resource)
  - No change from FCA outcome.
- Step 2 : Post-DCA step (if partial clear acceptable for state policy resource)
  - 400MW Existing resource priced retirement bids accepted.
  - 400MW of 450MW state policy resource obtains CSO and becomes existing in FCA_{n+1}
  - Retiring resources get
    - Unit A – 250MW at $8 – 7 or $1/kw-mo. * 250 * 12,000 = $3.0 million
    - Unit B – 200MW at $8 – 6 or $2/kw-mo. * 200 * 12,000 = $4.8 million
  - State policy resource gets $8 /kw-mo * 450*12,000 – $7.8M or $6.56/kw-month
  - Remaining 50MW remains new capacity going into FCA_{n+1}

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Further Design Detail

- How is the retiring resource's lost opportunity cost determined?

  - If the capacity clearing price is projected to stay higher than the resource's retirement bid price in the next FCA(s), is its lost opportunity cost (LOC) greater than the instant FCA lost opportunity?

- Would this apply to multi-year elections?

  - Is the new state policy resource price lock-in subject to an LOC payment adjustment beyond the instant FCA if it has a multi-year lock-in period?

- How low could a priced retirement bid go?

  - Would the lowest auction price at which state policy resource requests to stay in the auction discourage very low priced retirements? The priced retirement election is irreversible. If the priced retirement bid is bid too low, the resource wouldn't get selected for pairing yet would still be committed to the retirement path.

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Conclusion

- Paired retirement concept offers a framework to:
  - Facilitate entry of state policy resources
  - Transition fleet/avoid creation of surplus
  - Minimize disruption to the market
  - Permit individual state procurements to implement unique state policy

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