



Decision on flexible ramping product proposal

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Board of Governors Meeting

General Session

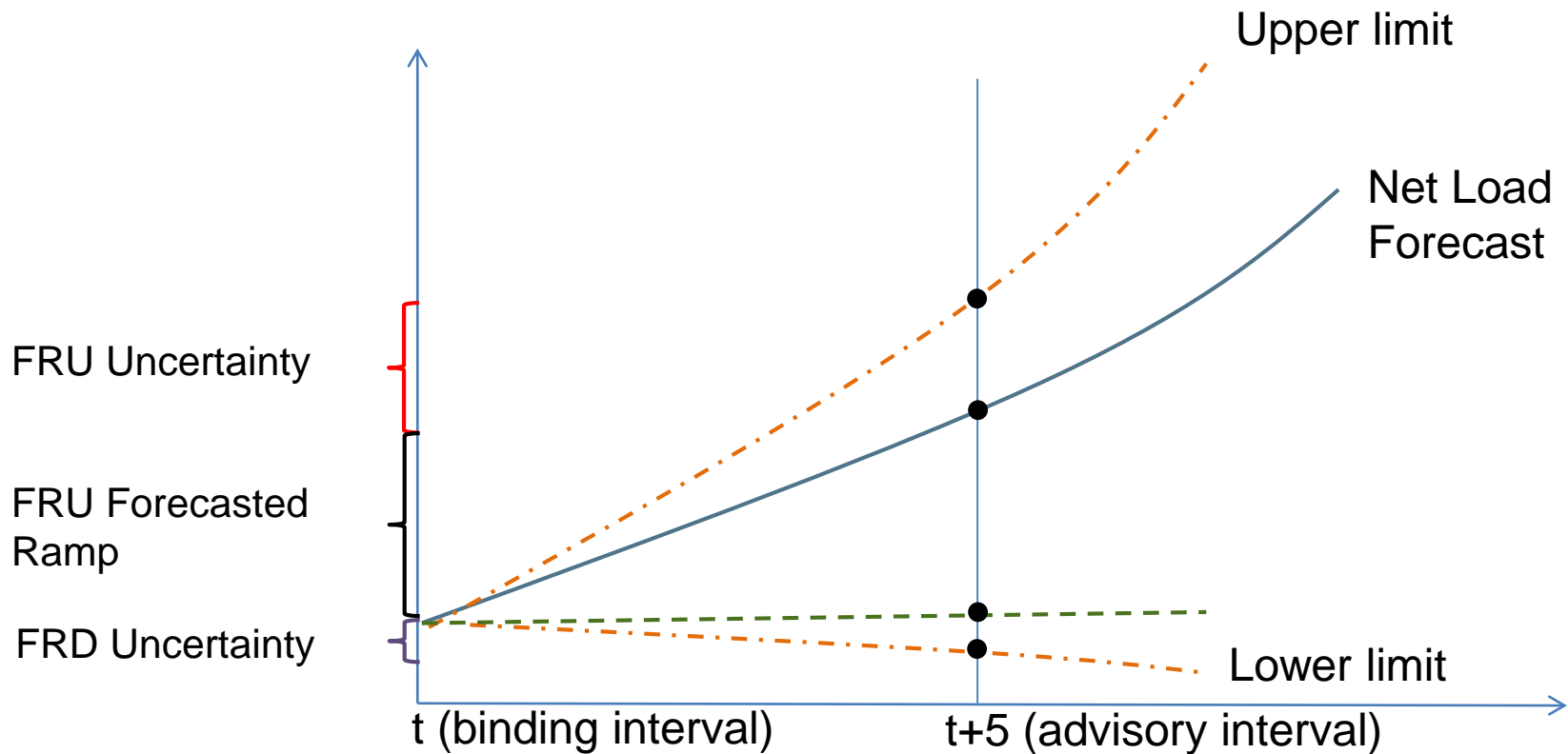
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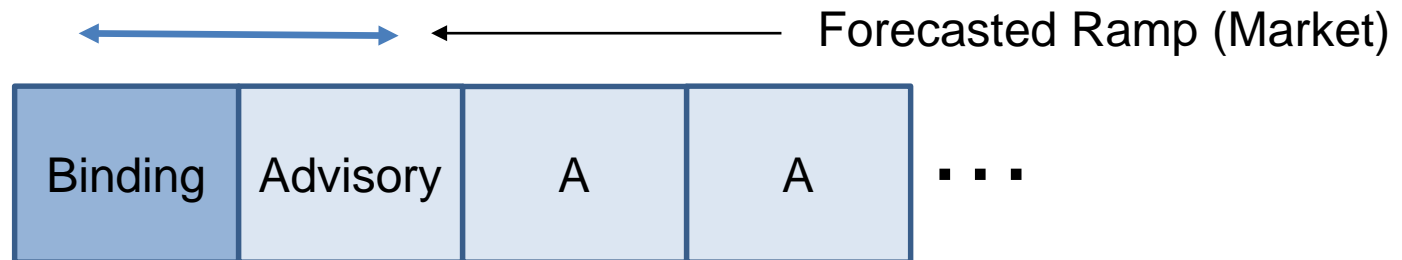
Flexible ramping product makes important changes to the real-time market.

- Secures ramping capability in the fifteen-minute market and real-time dispatch
- Accounts for upward and downward ramping needs
- Compensates resources who provide ramping and charges those that consume ramping capability
- Procures ramping capability for uncertainty when expected value greater than cost
- Aligns cost allocation with those who benefit from additional ramping capability to meet net load uncertainty

Flexible ramping product efficiently manages resources to meet range of expected net load conditions.

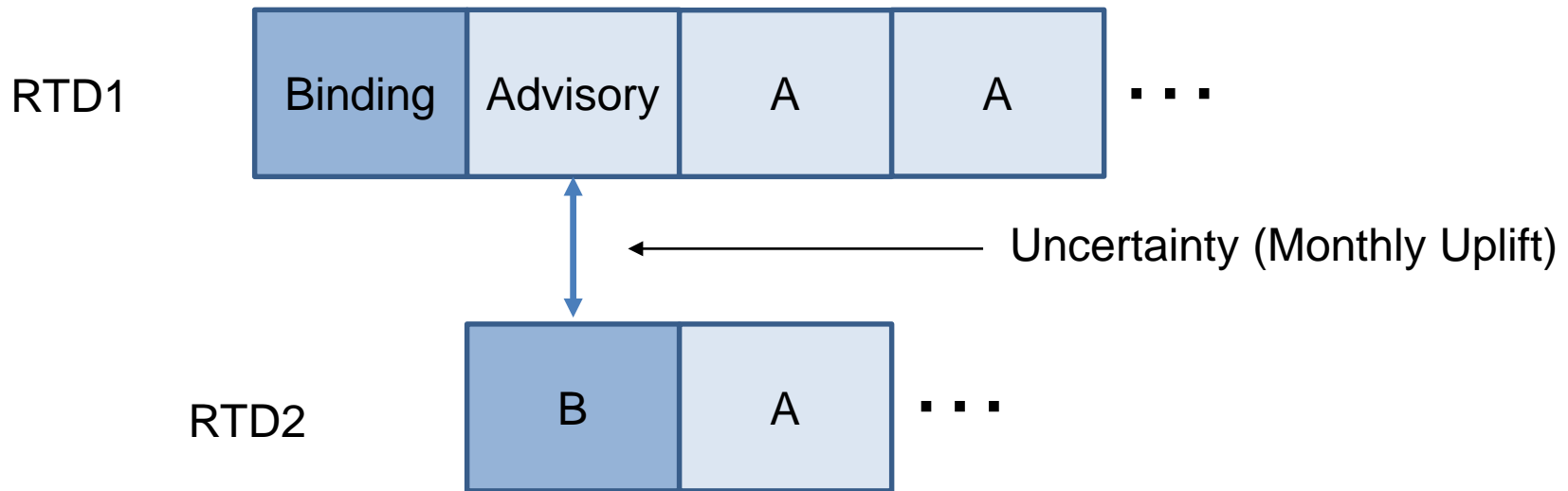


Resources that reduce forecasted ramp requirement are paid by those resources that increase the ramp requirement.



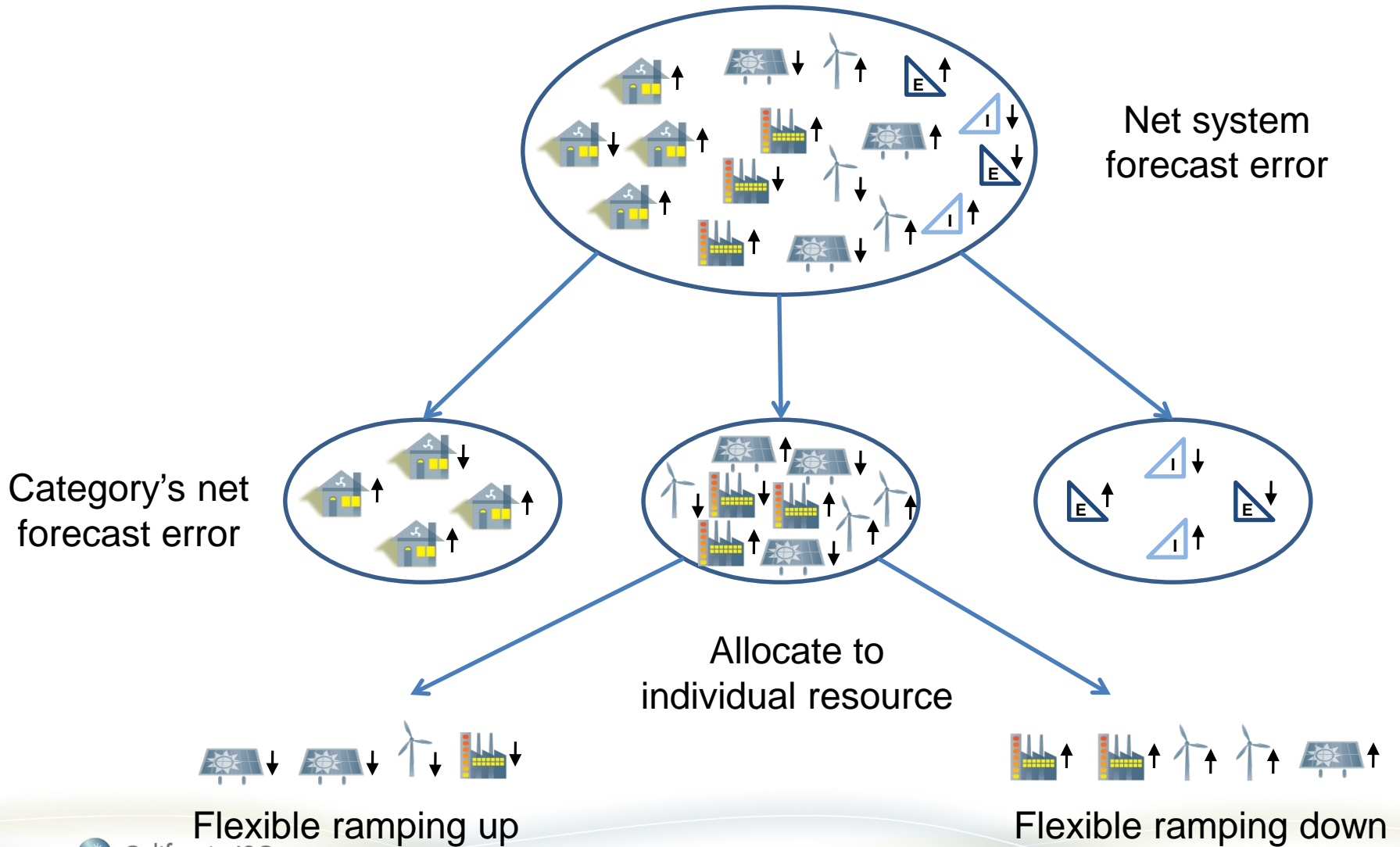
- FRP design settles both energy and forecasted ramp in the binding interval
- Compensation in binding interval is more consistent with energy bids

Uncertainty occurs when prior advisory interval net load is different than when financially binding.



- FRP design addresses small deviations in net load that can cause price volatility, by procuring additional ramp if benefit exceeds cost

Uncertainty costs allocated to those who benefit for additional ramp: load, supply and interties monthly.



As contemplated, the flexible ramping product will address aspects of the energy imbalance market.

- Resources sufficiency evaluation will include a downward ramping test
 - Test performed hourly to address “leaning”
 - If insufficient downward ramp, market freezes additional EIM transfers out of the EIM entity BAA
- Aligns participating and non-participating flexible ramping settlement across the EIM footprint

After a lengthy stakeholder process, there is broad support to move forward with the flexible ramping product proposal.

- Design has evolved from initial expectations
- Some residual areas of concern remaining...
 - No procurement in day-ahead market
 - No explicit ramping bid
 - No regional procurement within a balancing authority area
- Operational experience will determine if enhancements needed

Management recommends the Board approve the flexible ramping product proposal.

- Allows the market to manage upward and downward ramping capability across the EIM footprint
- Compensates resources who provide ramping and charges those that consume ramping capability
- Aligns cost allocation with those who benefit from additional ramping capability to meet net load uncertainty