



California ISO
Shaping a Renewed Future

Flexible Ramping Products

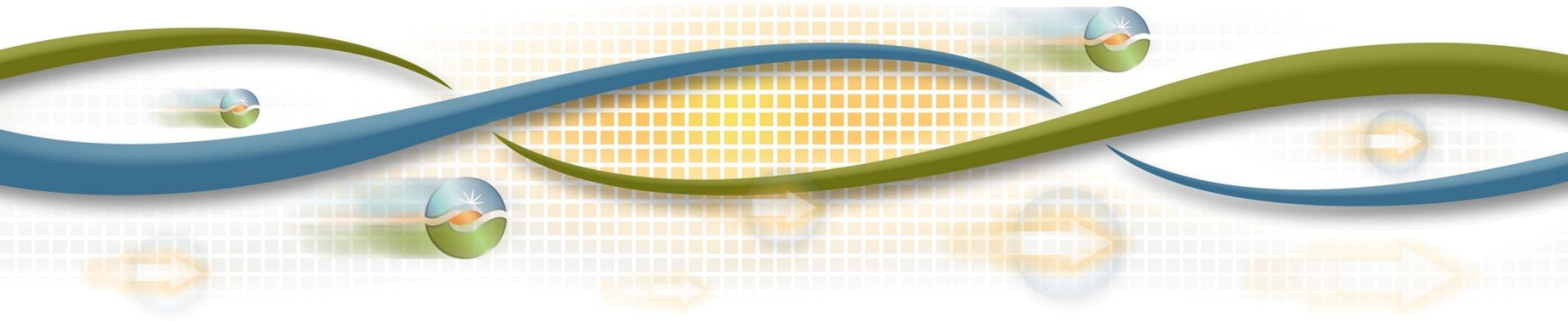
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Flexible ramp product objective

- Improve real-time dispatch flexibility
 - Handle net load variations happening on 5-minute time frame in the RTD market
 - Reduce power balance violations in RTD
- Manage market cost effectiveness

Flexible ramp product issues

- What is best procurement approach?
 - How much to procure in each day-ahead, RTUC, RTD
 - Ramping capability over different market intervals
- How to factor in energy bid into flexible ramp decision?
 - Energy bidding rules in RTD for award flexible ramp capability
- Compensation mechanism
 - Avoid double payments for capability and energy
 - Compensation for RTUC that avoids false opportunity cost
- Management of flexible ramp capability in RTD
 - Ensure access to ramping capability when needed

Alignment between design elements and proposed cost allocation

- Is allocation methodology consistent with guiding principles?
- Are uninstructed deviations appropriately representative of procurement decisions?
- Are there potential changes which could improve economic efficiency?