



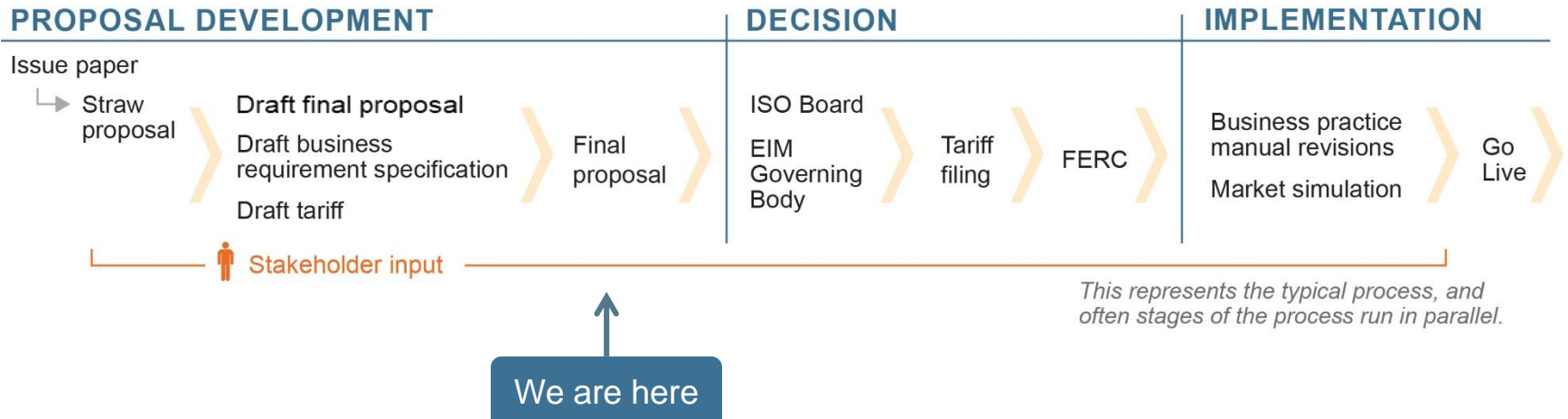
# Energy Storage and Distributed Energy Resources (ESDER) – Storage Default Energy Bid (DEB)

Final Proposal  
Stakeholder Web Conference  
October 29, 2020

# Agenda

Topic	Presenter
Welcome and Introduction	Jimmy Bishara
Final Proposal for ESDER – Storage DEB	Gabe Murtaugh
Next Steps	Jimmy Bishara

# ISO Policy Initiative Stakeholder Process



# Policy development timeline for the ESDER – Storage DEB

Date	Milestone
Oct 22	Post Final Proposal for ESDER - Storage DEB
Oct 29	Stakeholder meeting
Nov 12	Comments due
<b>Dec 1/2</b>	<b>EIM Governing Body – ESDER DEB</b>
<b>Dec 16/17</b>	<b>Board of Governors – ESDER DEB</b>
Fall 2021	Full implementation of all ESDER 4 policy items

# FINAL PROPOSAL FOR ESDER – STORAGE DEB

# The ISO included two changes to the default energy bid in the draft final proposal from the previous policy

1. Update the day-ahead default energy bid so that it does not include opportunity cost
  - MSC identified that these costs were not needed in the day-ahead default energy bid because of the 24-hour horizon of the optimization
  - These costs will continue to be observed in the real-time market, this is important because of the shorter look-ahead horizon
2. Exclude ‘small’ storage resources from being subject to the ISO market power mitigation logic tools
  - Little impact likely to market results
  - Over-mitigation could have impacts on these storage resources

The ISO is proposing to move forward with both changes

## The ISO received mixed feedback from stakeholders on these policy changes

- Accuracy issues with the charging costs embedded in the default energy bid
- Market participants may be able to better predict high prices in the real-time markets
  - ISO analysis of DEB does not arrive at the same conclusion
  - The ISO will still offer the negotiated option if costs are not covered
  - The ISO may address issues in future updates of the default energy bid
- Opportunity costs for the following day/period should be included in the default energy bid
  - The ISO has not formulated a good mechanism to estimate these costs and they may not be necessary
- Costs to buy energy may not be necessary in the DAM
  - ISO is unsure if this is true in all situations, and may revisit this assumption as future policy is developed

## The ISO is proposing small changes to consider negative prices in the default energy bid

- The proposed default energy bid continues to be based on three primary cost categories:
  - 1) Energy costs and losses, 2) Cycling costs, and 3) Opportunity costs

### **Final Formulation:**

$$DA \text{ Storage DEB} = (\text{MAX}(En_{\delta/\eta}, 0) + \rho) * 1.1$$

$$RT \text{ Storage DEB} = \text{MAX}[(\text{MAX}(En_{\delta/\eta}, 0) + \rho), OC_{\delta}] * 1.1$$

Where:

*En*: Estimated cost for resource to buy energy

$\delta$ : Energy duration

$\eta$ : Round-trip efficiency

$\rho$ : Variable cost

OC: Opportunity Cost



## The ISO is proposing adjustments to the consider negative prices in the storage default energy bid

- ISO notes that negatively priced intervals will impact the default energy bid through the bid multiplier in the opposite direction as the proposal anticipated
  - This was a concern brought up in comments and in the previous stakeholder discussion
- From analysis previously completed by the ISO, negative prices would impact the default energy bid during more than 20 days in 2019 sample data
  - These impacts have a relatively small magnitude
- ISO will continue to monitor how frequently negative prices would impact the default energy bid and the impacts these values could have on the final result

## Next steps

- All related information for the ESDER initiative is available here:  
<https://stakeholdercenter.caiso.com/StakeholderInitiatives/Energy-storage-and-distributed-energy-resources>
  - Please submit stakeholder written comments on today's discussion and the hybrid resources draft final proposal by **November 12, 2020**
- Important – Please review new process for submitting comments**
- Provide comments using the new stakeholder commenting tool
  - First-time users must register using their email address in order to submit comments on initiatives
  - The commenting tool is located on the Stakeholder Initiatives landing page (click on the “commenting tool” icon):  
<https://stakeholdercenter.caiso.com/StakeholderInitiatives>