# Intertie Deviation Settlement: Draft Final Proposal

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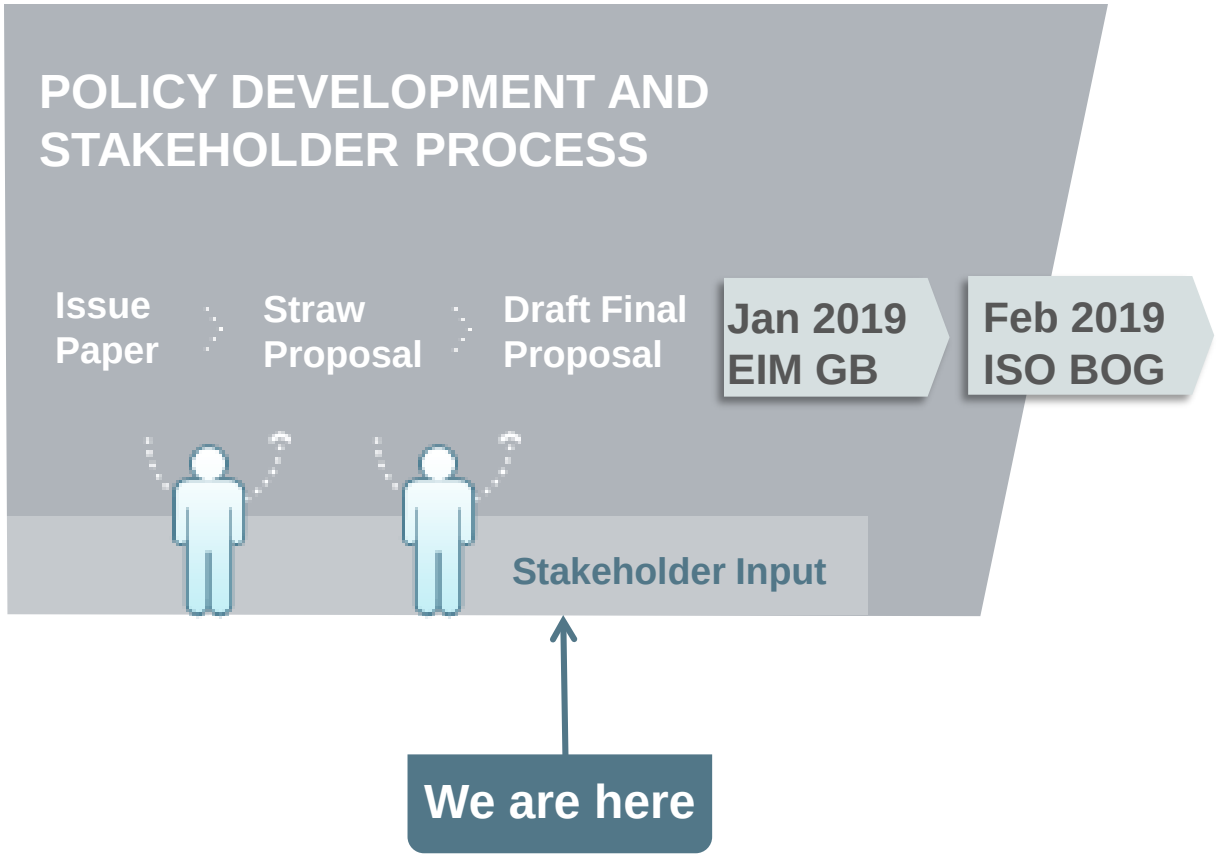
Market Design Policy

Stakeholder Call
December 19, 2018

# IDS Draft Final Proposal, Stakeholder Call December 19, 2018 9:00 – 11:00AM

| Time | Topic | Presenter |
|---|---|---|
| 9:00 – 9:05am | Welcome | Jody Cross |
| 9:05 – 9:15am | Stakeholder comments from straw proposal | Megan Poage |
| 9:15 – 9:45am | Data analysis | Danielle Tavel |
| 9:45 – 10:30am | Under/over delivery charge proposal | Megan Poage |
| 10:30 – 10:45 | Stakeholder feedback and questions | Megan Poage |
| 10:45 – 11:00am | Next steps | Jody Cross |

# ISO Policy Initiative Stakeholder Process



Intertie Deviation Settlement

# STAKEHOLDER COMMENTS
## FROM STRAW PROPOSAL

# Stakeholders are generally supportive of design elements and propose following changes:

- T-40 E-Tagging deadline would result in seams issues and should be removed from the proposal
- Under/over delivery charge (UODC) should use max of FMM of RTD LMP
- UODC should use penalty floor of $10 instead of $0
- ISO should not permit over-scheduling of intertie resources
- Penalty should be more severe when award is accepted in ADS but no E-Tag is submitted
- ISO should allow scheduling coordinators to accept awards for a longer period of time in ADS

# Summary of the proposed (UODC) strengthens incentivizes to deliver imports/exports scheduled in HASP

1. Curtailed E-Tags will be excluded from the under/over delivery charge, which allows for removal of the 10% threshold
2. The under/over delivery charge will be evaluated in each fifteen-minute interval
3. 15-minute market dispatch will be based on transmission profile in submitted E-Tag
4. Declined and undelivered energy will be subject to UODC = 0.5 X MAX (FMM LMP, RTD LMP), with a $10/MWh minimum

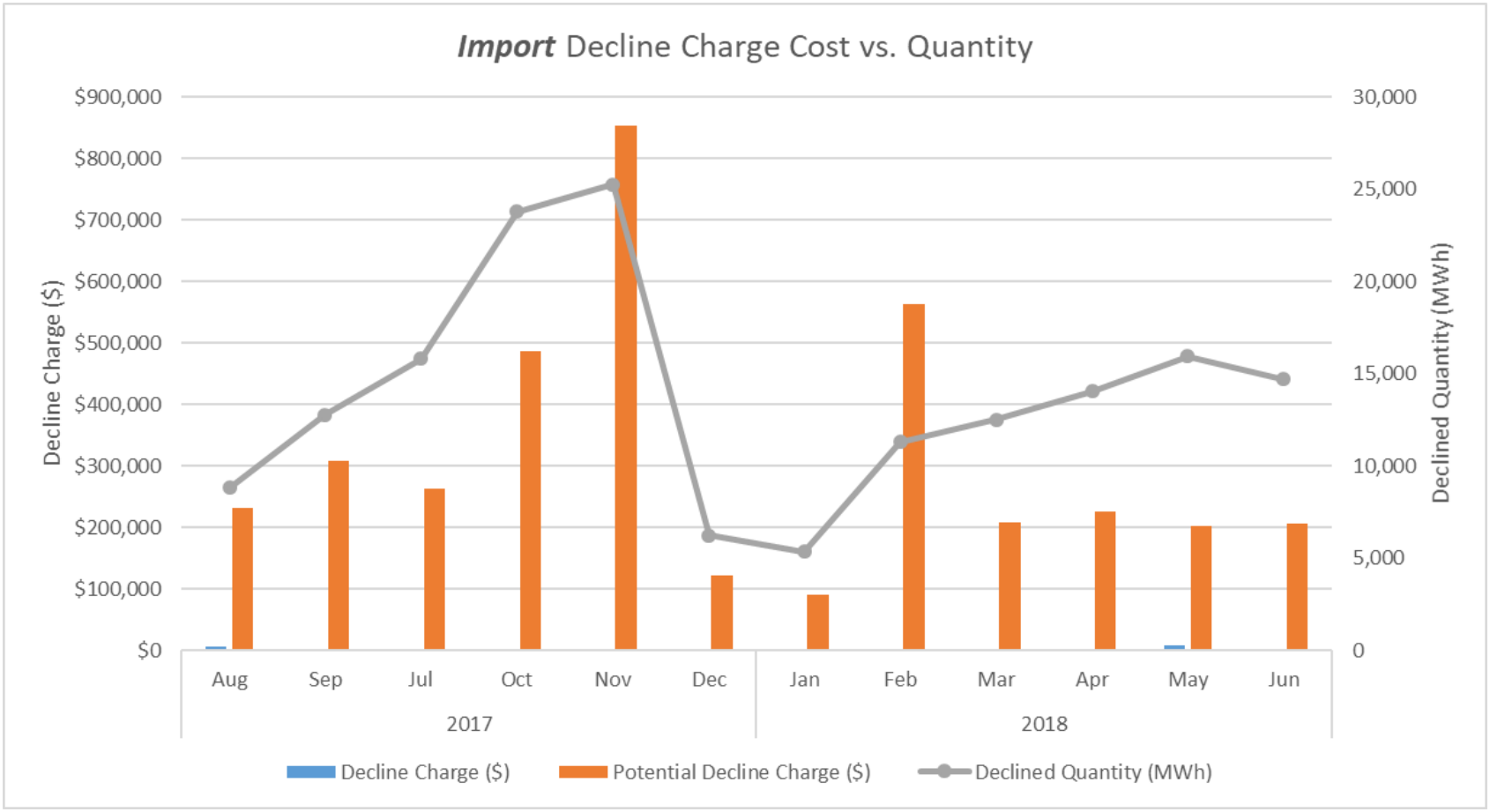
# *Intertie deviation settlement* proposal provides significant benefit to ISO markets and grid operations

- Real-time markets are aware of scheduled energy and can dispatch/schedule more accurately
- Assurance that intertie energy will be delivered will reduces the need for ISO operators to conform ('bias')
- Ensures intertie energy counting towards the resource sufficiency test is real and will be delivered
- Reduces impact to real-time market pricing if intertie energy is not delivered
- Increases reliability, especially during times of need such as peak hours during heat waves

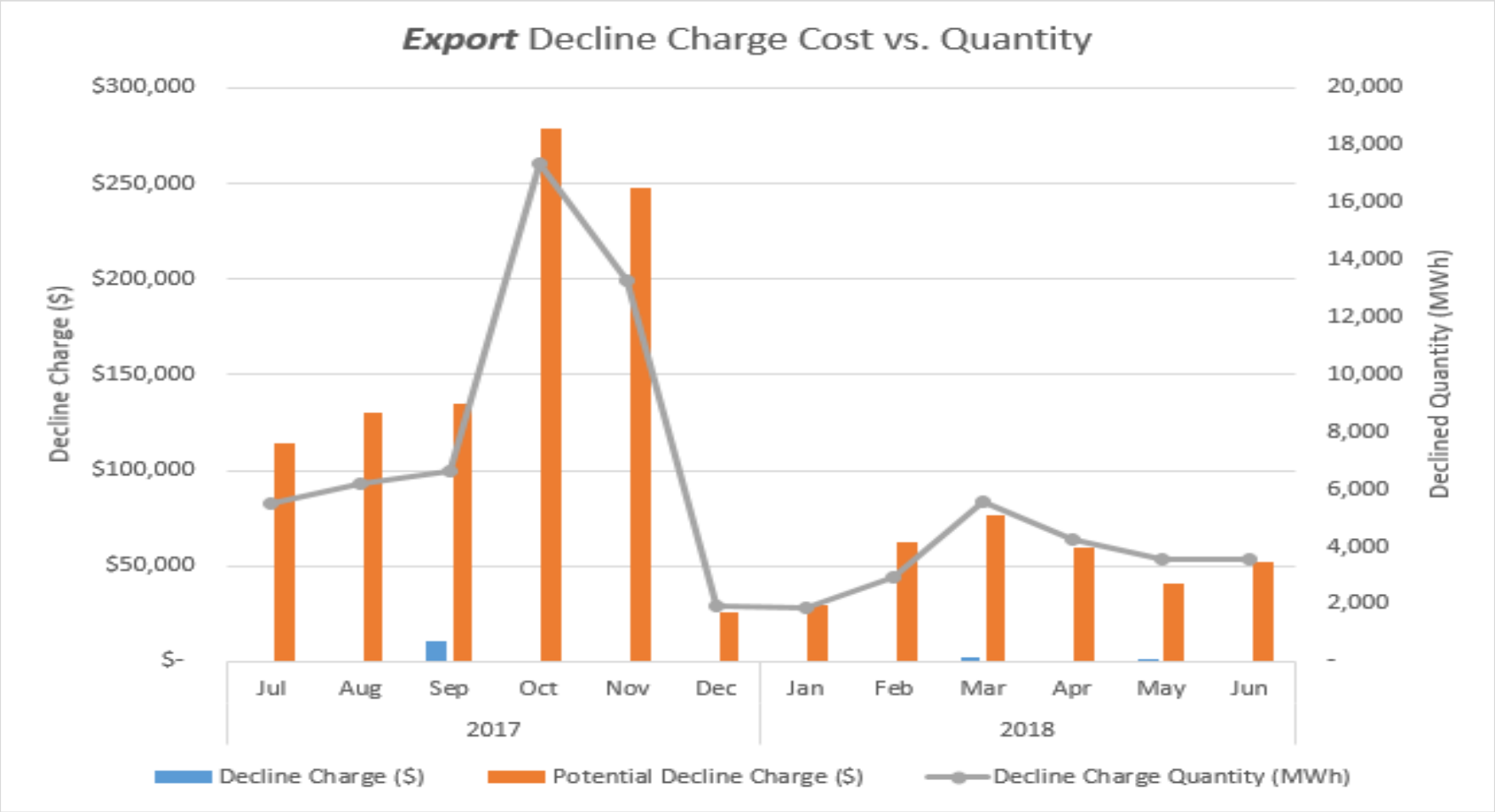
Intertie Deviation Settlement

# DATA ANALYSIS

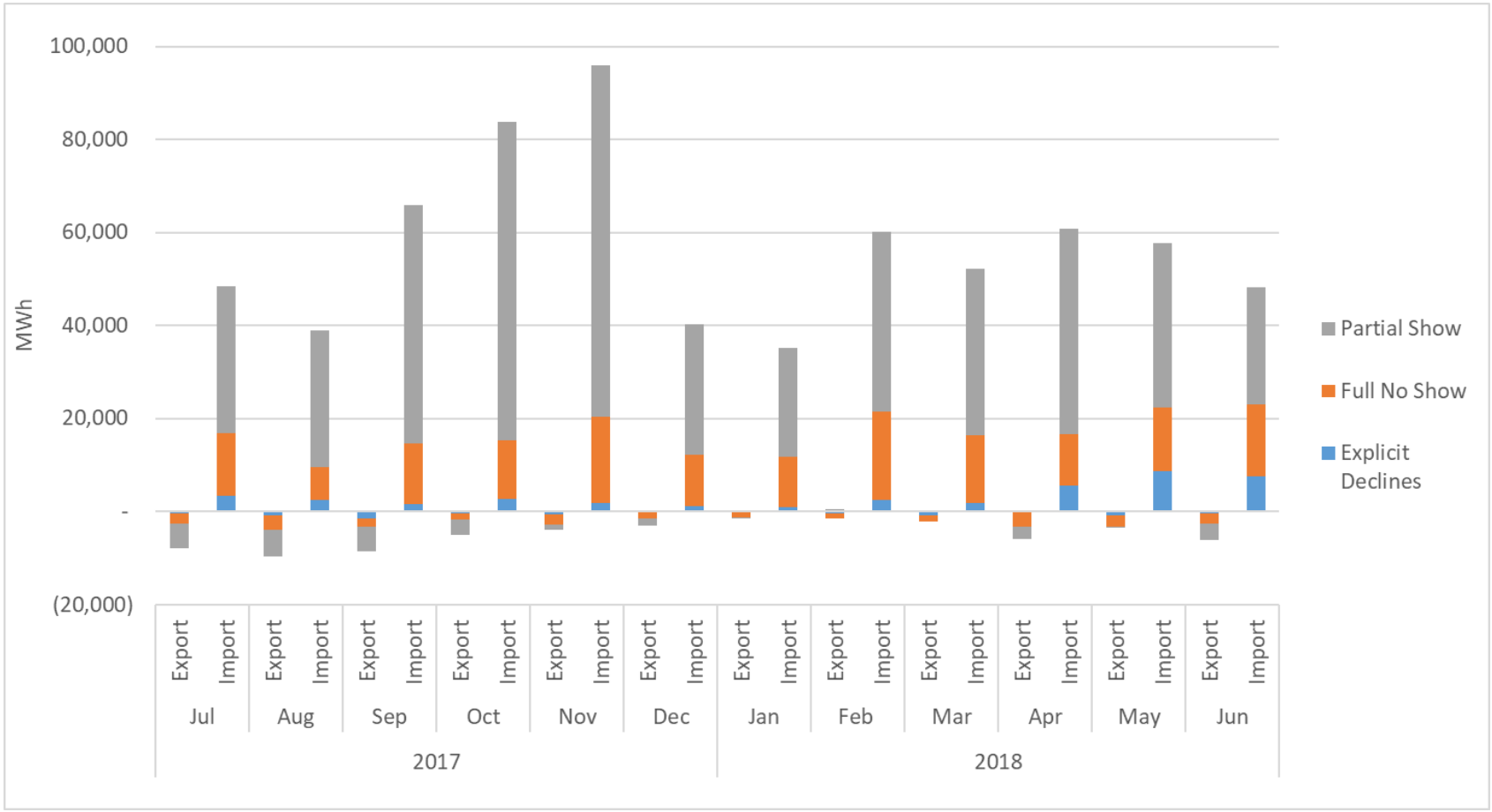
# Decline charge settlement data: imports



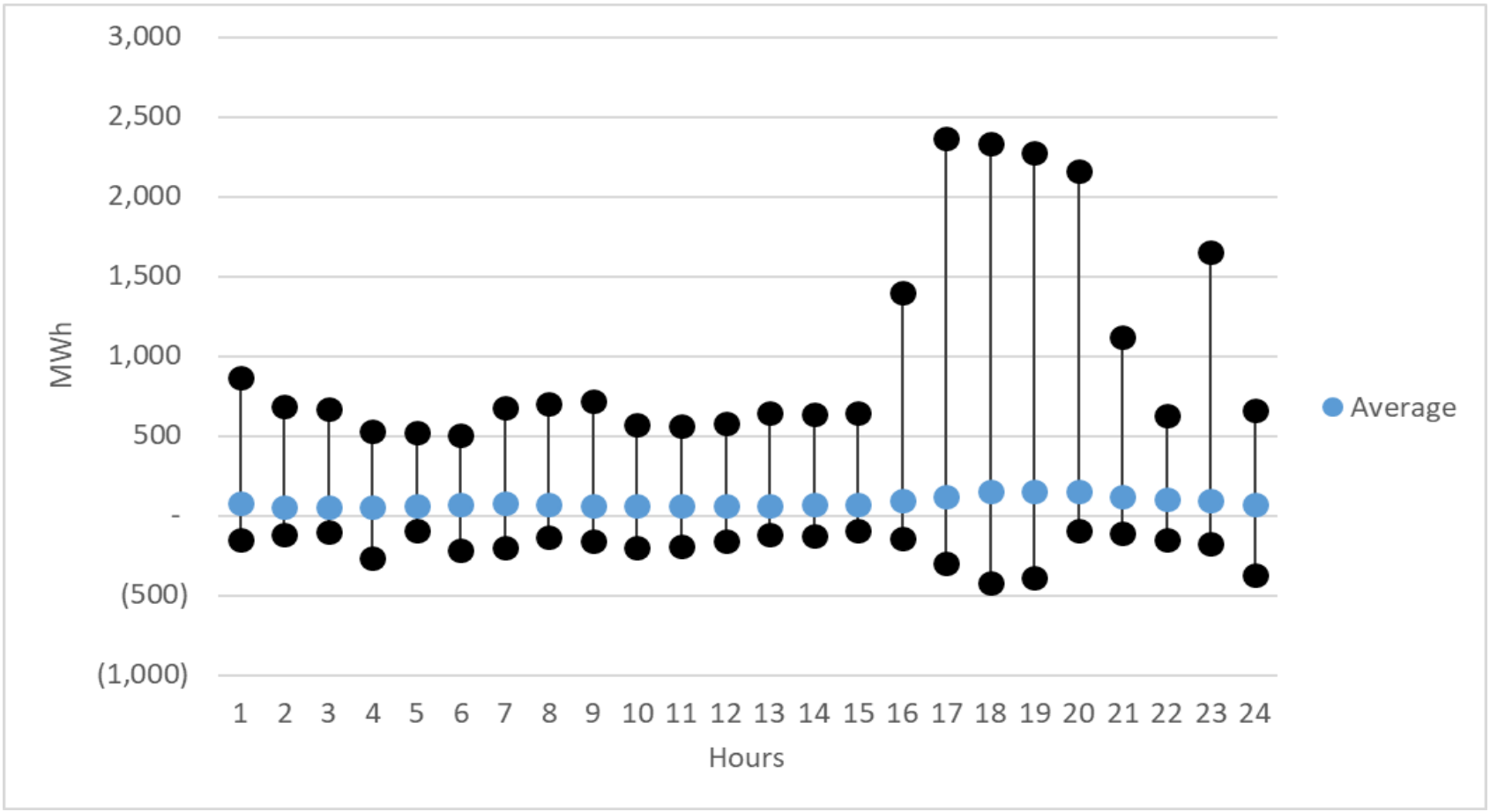
# Decline charge settlement data: exports



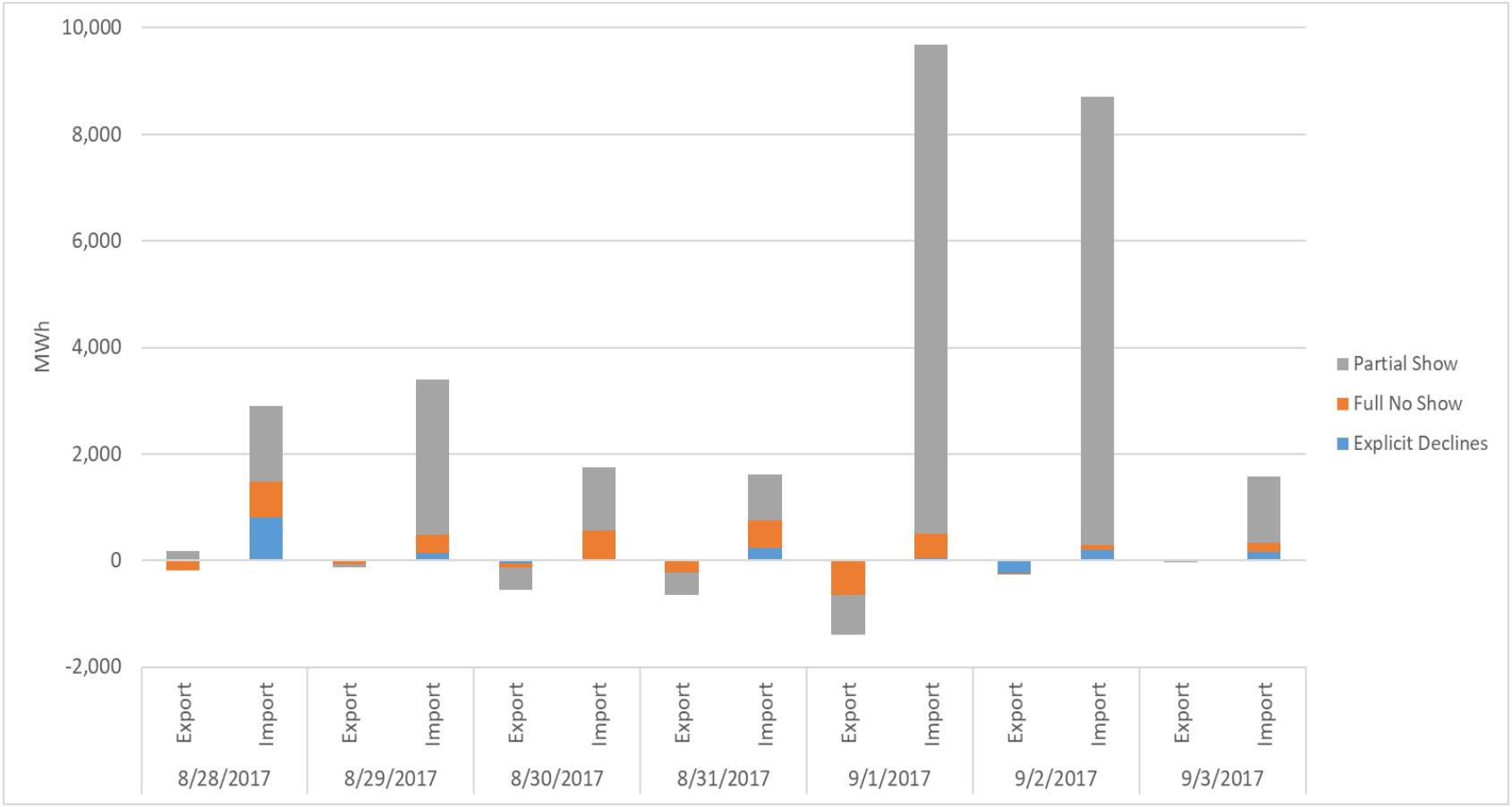
# Undelivered Interties (July 2017 – June 2018)



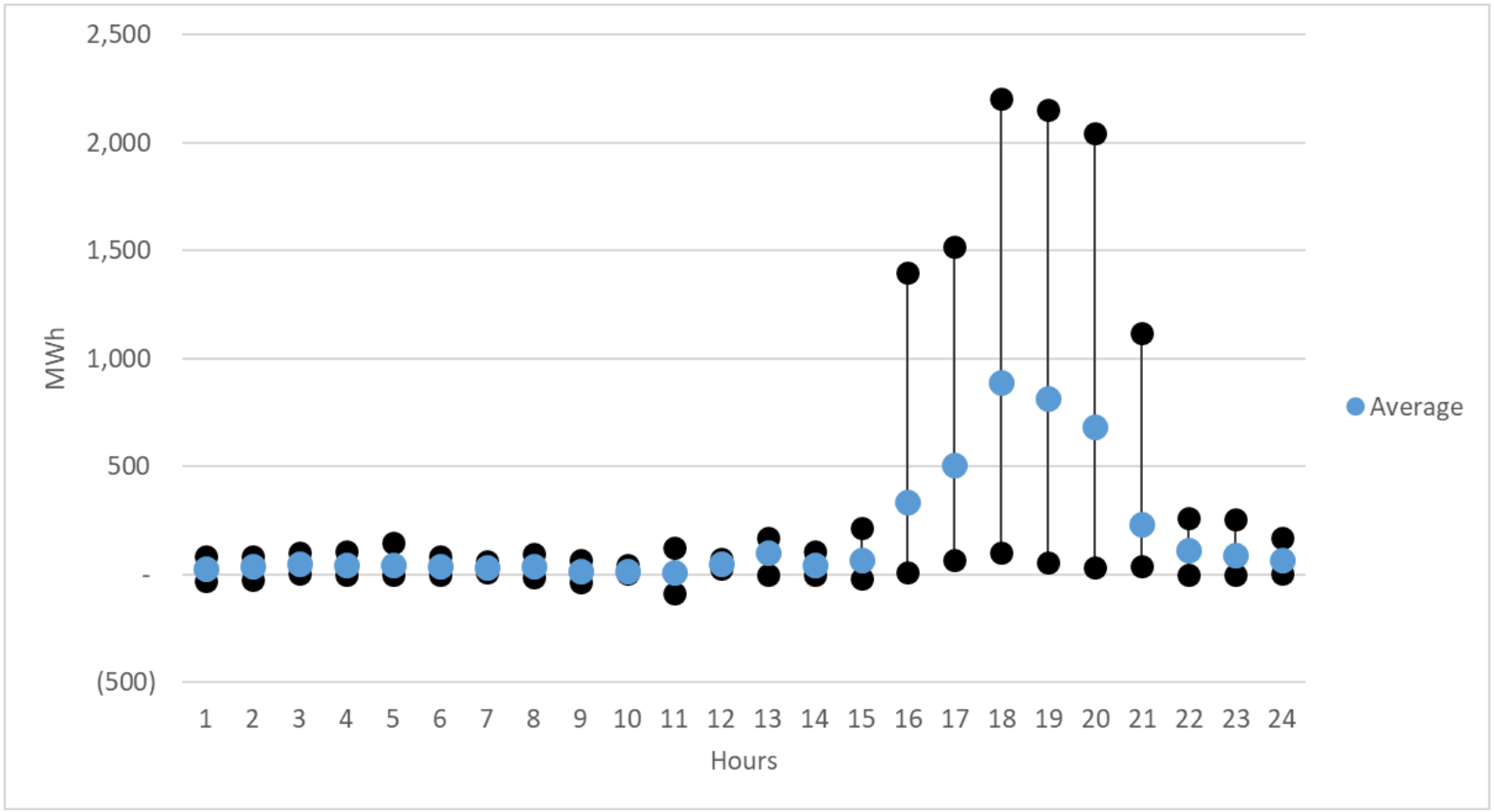
# Range of Hourly Undelivered Interties (July 2017 – June 2018)



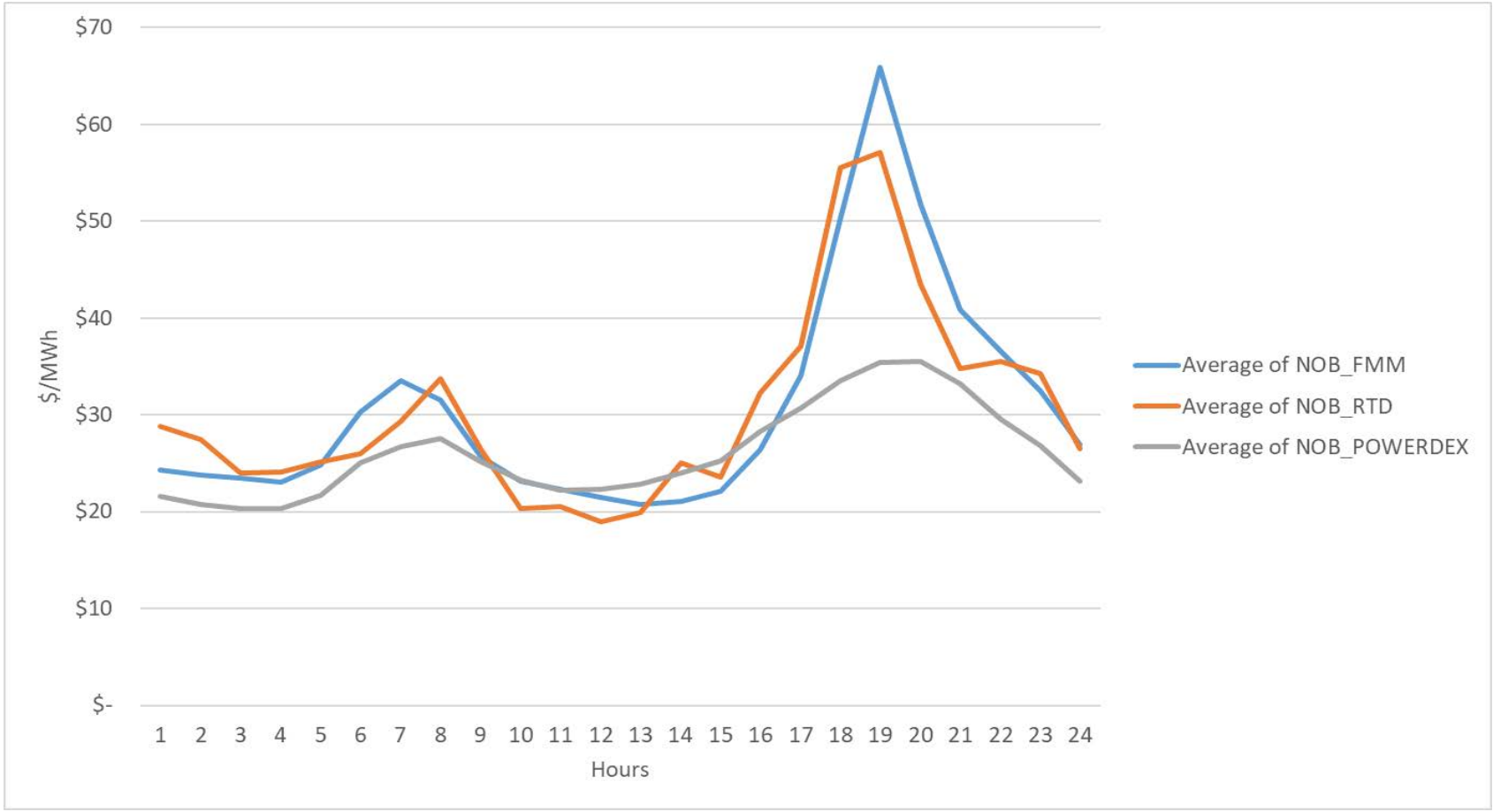
# Undelivered Interties during Sept 2017 Heat Wave



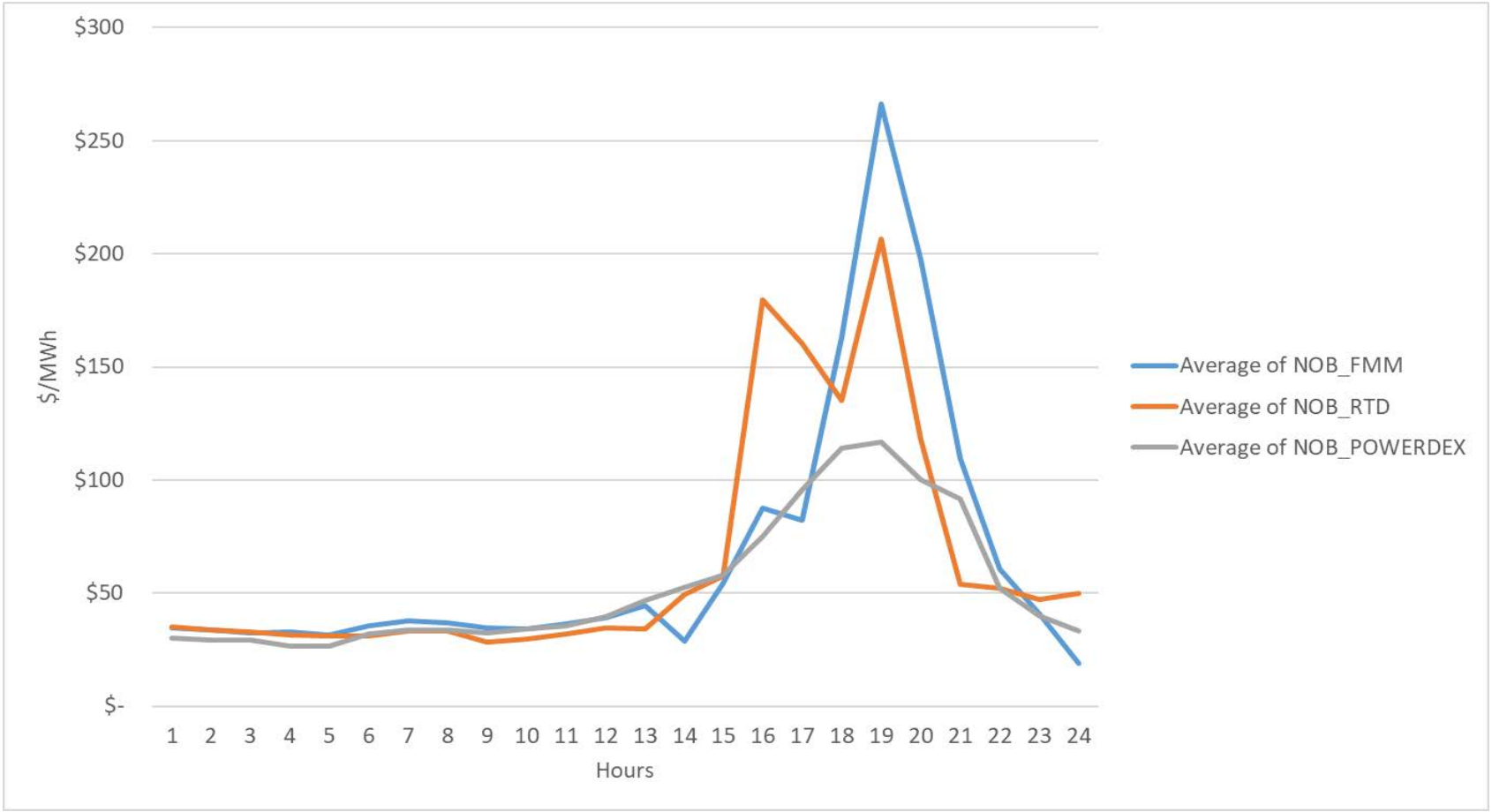
# Range of Hourly Undelivered Interties (8/28/2017-9/3/2017)



# Average hourly prices at NOB (June 2017 – July 2018)



# Average hourly prices at NOB during Sept 2017 Heat Wave



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# UNDER/OVER DELIVERY CHARGE

# ISO proposes to exclude curtailments from counting towards under/over delivery charge

- Deviations that occur due to the fault of the scheduling coordinator will be subject to the UODC
- Deviations that occur for reliability reasons will be excluded from the under/over delivery penalty
- Individual resources that are curtailed by the ISO because the E-Tag exceeds the market award will still be subject to the UODC
  - The curtailment will be automated and requires fifteen-minute curtailments of hourly block resources

# Exclusion of curtailments from the proposed charge allows for the elimination of the 10% threshold

- The existing decline charge is not effective because scheduling coordinators rarely exceed the 10% monthly threshold
- Purpose of the 10% threshold was to specifically account for curtailments
  - By excluding curtailments the threshold is not necessary
- Charge will be applied for each fifteen-minute interval
  - Requires receipt of 15-minute integrated E-Tag information from OATI

# Logic for fifteen-minute awards for hourly block resources is based on submission of an E-Tag

| FMM Binding Interval | Time of Operating Hour | Time of market run | Logic Used to Determine FMM Binding schedule for Hourly Block Resources |
|---|---|---|---|
| *TRANSMISSION PROFILE DUE AT T-40* | | | |
| 1 | 00 – 15 | T-37.5<br>RTPD5 | MIN (HASP schedule, ADS accepted amount, E-Tag transmission profile) |
| 2 | 15 – 30 | T-22.5<br>RTPD4 | MIN (HASP schedule, ADS accepted amount, E-Tag transmission profile) |
| *ENERGY PROFILE DUE AT T-20* | | | |
| 3 | 30 – 45 | T-7.5<br>RTPD7 | E-Tag energy profile |
| 4 | 45 – 00 | T+7.5<br>RTPD6 | E-Tag energy profile |

# Under/over delivery charge will be calculated using the HASP schedule as a reference point

| Bid Option | Determination of Under/Over Delivery Quantity |
|---|---|
| **Hourly Block** | Absolute Value (HASP Schedule – after the fact E-Tag Energy Profile) |

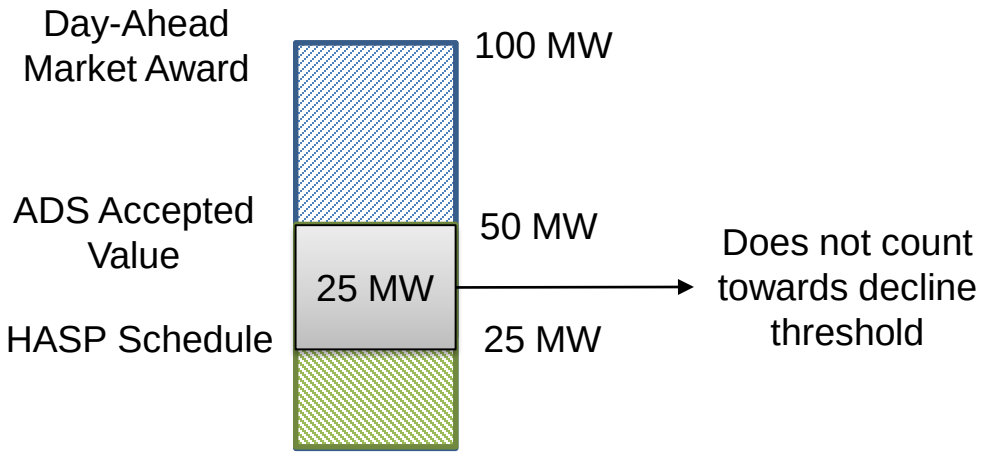
- HASP is the last opportunity to dispatch hourly-block resources
- If HASP schedule is declined, FMM must use other resources pool to compensate for the shortage

| Bid Option | Determination of Under/Over Delivery Quantity |
|---|---|
| **Fifteen-minute dispatchable** | E-Tag Transmission Profile – HASP schedule<br>If negative, penalty applies<br>If positive, penalty does not apply |

- If transmission profile is submitted to support the HASP schedule, energy profile will auto-adjust to match FMM schedule
- If transmission profile is not submitted, it's impossible for energy to be awarded and delivered

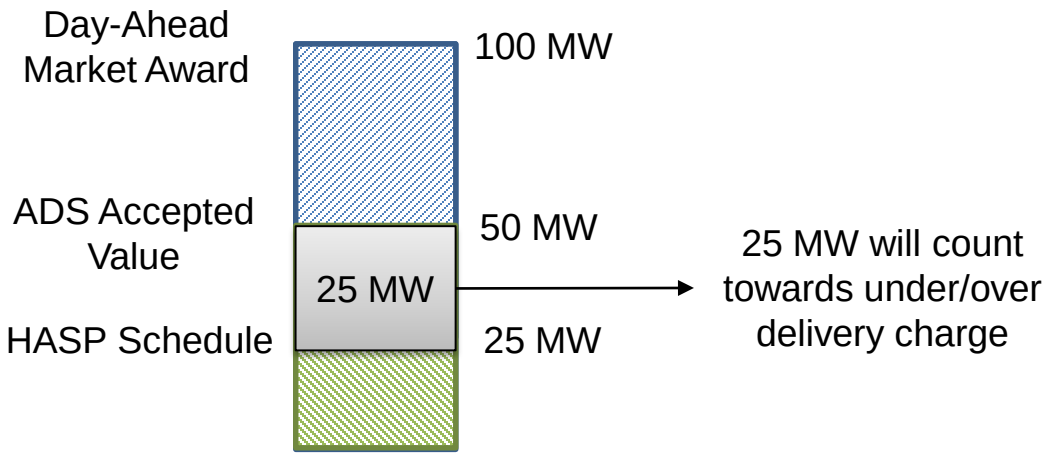
# Existing policy allows for decline of decremental dispatches with no impact to decline charge threshold

- Existing **decline charge** only applies when final award is less than HASP Schedule
  - Declines of decremental import (or incremental export) resources may result in operational impacts



# ISO proposes to apply new charge to both under and over delivery in comparison to reference schedule

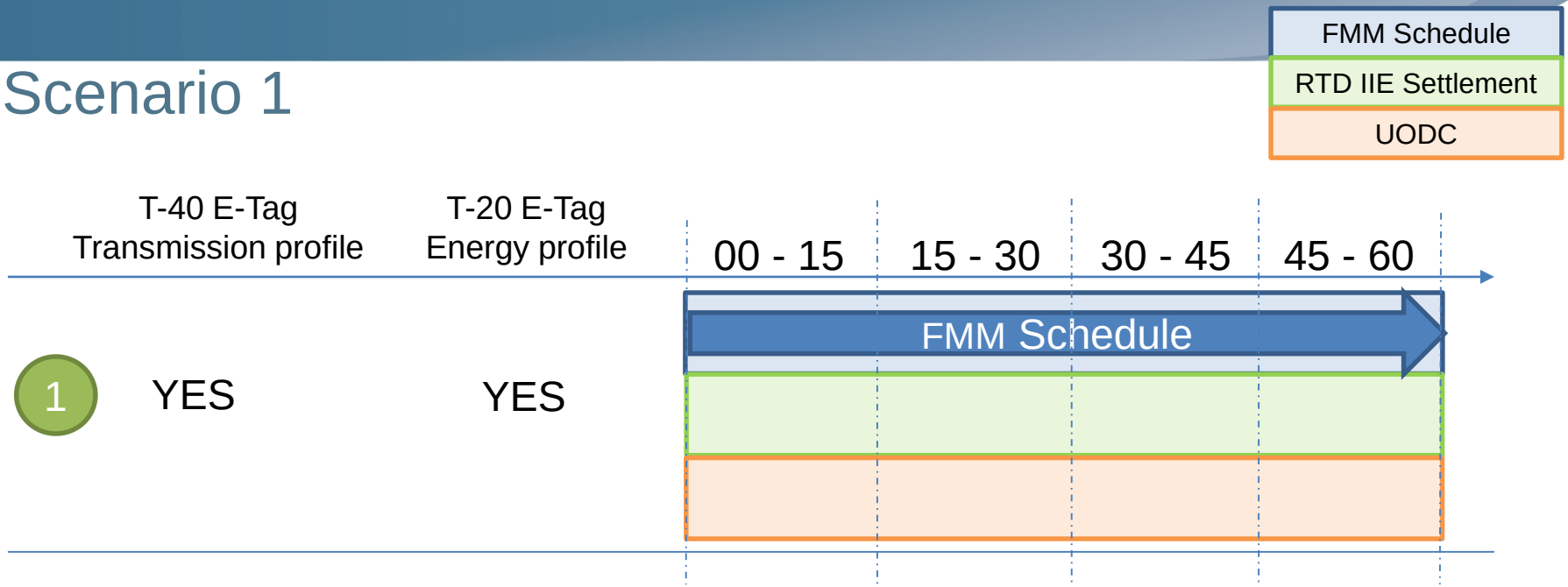
- New **under/over delivery charge** will address decline of decremental dispatches



# Proposed charge will equal 0.5 X MAX (FMM LMP, RTD LMP), with a $10/MWh minimum

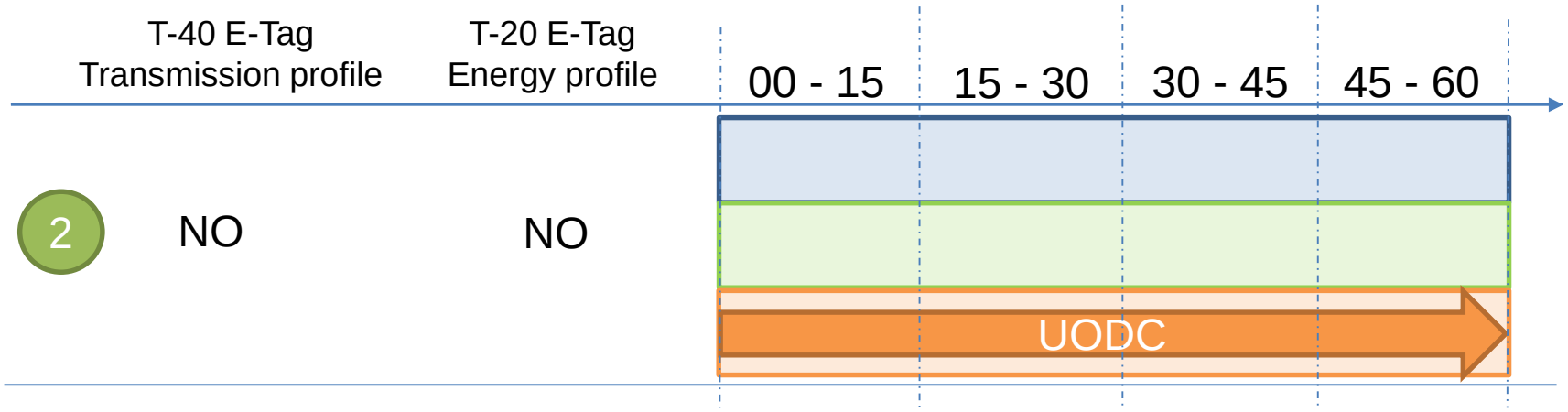
- Use of the greater of the FMM or RTD provides the strongest incentive to deliver awarded energy
  - This is necessary because at times the FMM price is higher than the RTD price
- Floor of $10 for under/over delivery charge will ensure the incentive still applies even if pricing is low
- Additional 25% penalty if an SC accepts a HASP schedule in ADS by T-45 but does not submit an E-Tag
  - Accepting an award but failing to submit an E-Tag results in operational challenges for ISO operators

# Scenario 1



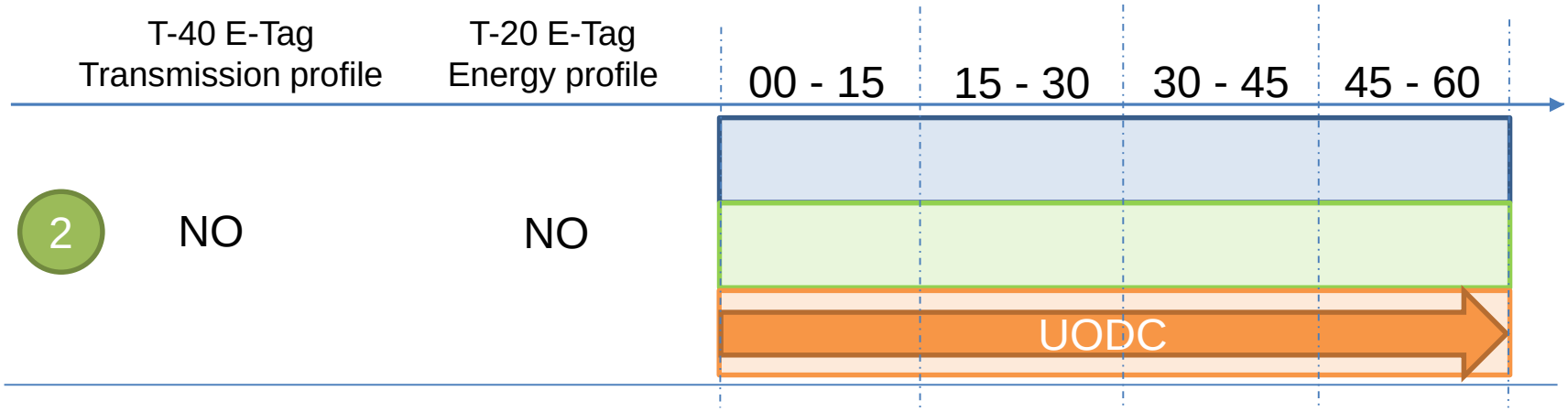

- E-Tag energy profile = FMM schedule
  - no imbalance energy settlement
- E-Tag energy profile = HASP schedule
  - no under/over delivery charge

# Scenario 2a – award declined in ADS




- E-Tag energy profile = FMM schedule
  - no real-time imbalance energy settlement
- E-Tag energy profile ≠ HASP schedule
  - subject to under/over delivery charge

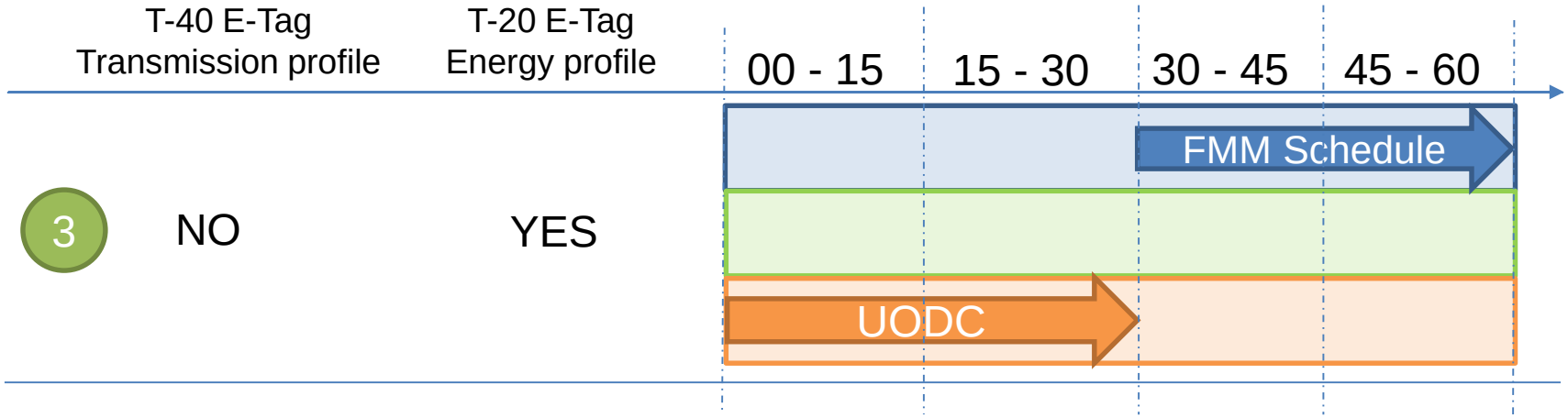
# Scenario 2b – E-Tag not submitted




- E-Tag energy profile = FMM schedule
  - no real-time imbalance energy settlement

- E-Tag energy profile ≠ HASP schedule
  - subject to under/over delivery chare with additional 25% for not tagging

# Scenario 3




- E-Tag energy profile ≠ FMM schedule for interval 1 & 2
  - E-Tag must be curtailed

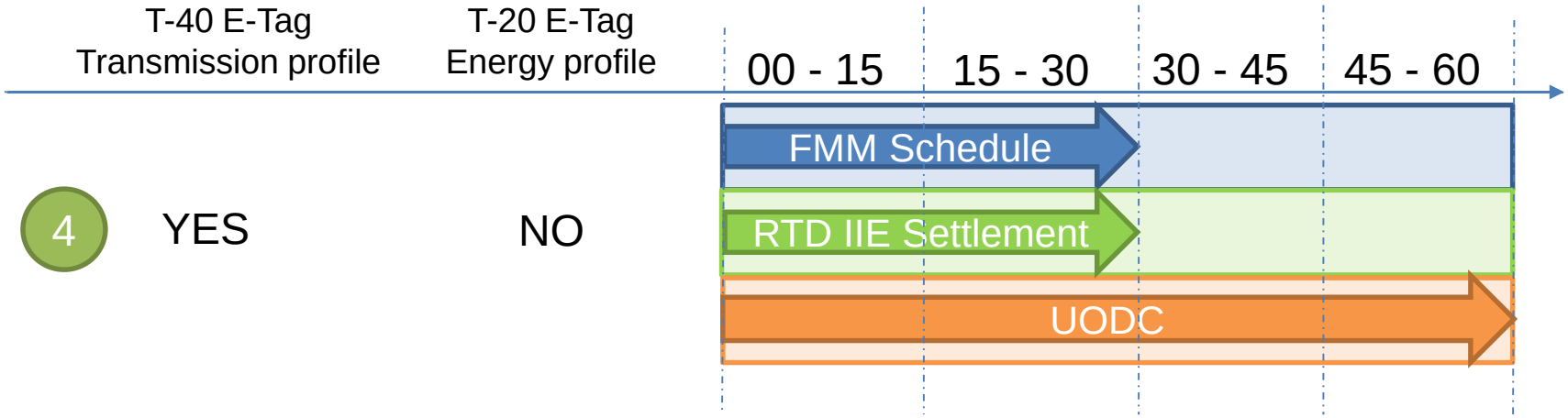
- E-Tag energy profile ≠ HASP schedule for interval 1 & 2
  - subject to under/over delivery charge

# Scenario 3, cont.

- Consistent with the current scheduling policy, the ISO will not allow energy to flow if the energy profile exceeds the market award
  - This will result in a curtailment for scenario 3
  - Prevents over-scheduling on interties

- ISO will automate curtailments at approximately T-15
  - E-Tag energy profiles will be curtailed to match FMM award
  - Curtailments may occur for 15-min intervals
  - These resources will be subject to the UODC

# Scenario 4




- E-Tag energy profile ≠ FMM schedule for interval 1 & 2
  - real-time imbalance energy settlement

- E-Tag energy profile ≠ HASP schedule
  - subject to under/over delivery charge

# Additional items addressed in draft final proposal

- ISO will allow scheduling coordinators to accept, partially accept, or decline awards in ADS up to T-45
- Example 7 from previous proposal (decline resulting in intertie over-scheduling) will not be addressed with a business rule. *See straw proposal for additional info.
- HASP reversal rule will be clarified in tariff
  - Day-ahead intertie schedules need to be tagged until the publication of HASP

# Summary: Decline Charge vs. Under/Over Delivery Charge

| Decline Charge | Under/Over Delivery Charge |
|---|---|
| FMM binding award for interval 1 & 2 of operating hour = ADS accepted value* | FMM binding award for interval 1 & 2 of operating hour = min(HASP dispatch, ADS accepted value, E-Tag transmission profile) |
| Curtailments included | Curtailments excluded |
| 10% monthly threshold | No threshold - applied per 15-min interval |
| Compares HASP schedule to FMM award | Compares HASP schedule to E-Tag (hourly block resources) or Transmission profile (FMM resources) |
| Applies to hourly block resources | Applies to all intertie resources** |
| Applies to under scheduling | Applies to under and over scheduling |
| Charged at 50% of FMM LMP | Charged at 50% of MAX(FMM, RTD) LMP with $10 floor |
| Allocated to monthly measured demand less ETCs and TORs | Allocated to measured demand less ETCs and TORs |

*for hourly block resources
**excluding dynamic resources

# Settlement worksheet provides overview of UODC

| CURRENT W/OUT 10% THRESHOLD | | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | price | settlement |
| DAM | 0 | 0 | 0 | 0 | $ 30.00 | $ - |
| HASP | 100 | 100 | 100 | 100 | $ - | $ - |
| XMSN PROFILE | - | - | - | - | $ - | $ - |
| FMM | 100 | 100 | 0 | 0 | $ 55.00 | $ 2,750.00 |
| RTD (E-TAG) | 0 | 0 | 0 | 0 | $ 20.00 | $ (1,000.00) |
| | | | | *ENERGY SETTLEMEN* | | *$ 1,750.00* |
| DECLINE CHARGE | 0 | 0 | -100 | -100 | | $ (1,375.00) |
| | | | | | TOTAL | **$ 375.00** |

**SCENARIO 1**
0 MW DAM award
100 MW HASP schedule
No E-Tag submitted

| PROPOSED HOURLY BLOCK | | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | price | settlement |
| DAM | 0 | 0 | 0 | 0 | $ 30.00 | $ - |
| HASP | 100 | 100 | 100 | 100 | $ - | $ - |
| XMSN PROFILE | 0 | 0 | 0 | 0 | $ - | $ - |
| FMM | 0 | 0 | 0 | 0 | $ 55.00 | $ - |
| RTD (E-TAG) | 0 | 0 | 0 | 0 | $ 20.00 | $ - |
| | | | | *ENERGY SETTLEMEN* | | *$ -* |
| UODP | -100 | -100 | -100 | -100 | | $ (2,750.00) |
| | | | | | TOTAL | **$ (2,750.00)** |

| PROPOSED FMM | | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | price | settlement |
| DAM | 0 | 0 | 0 | 0 | $ 30.00 | $ - |
| HASP | 80 | 100 | 150 | 125 | $ - | $ - |
| XMSN PROFILE | 100 | 100 | 100 | 100 | $ - | $ - |
| FMM | 40 | 0 | 80 | 100 | $ 55.00 | $ 3,025.00 |
| RTD (E-TAG) | 40 | 0 | 80 | 100 | $ 20.00 | $ - |
| | | | | | *ENERGY* | *$ 3,025.00* |
| UDP | 0 | 0 | -50 | -25 | | $ (515.63) |
| | | | | | TOTAL | **$ 2,509.38** |

http://www.caiso.com/Documents/UnderOverDeliveryChargePproposal.xlsx

Intertie Deviation Settlement

# FEEDBACK AND QUESTIONS

# The ISO is requesting prompt feedback regarding the changes discussed during this stakeholder call

- Are stakeholders generally favorable to the major design elements of the under/over deliver charge?
- Are there any outstanding items that have not been addressed?
- Do stakeholders have additional questions that can be answered at this time?

Intertie Deviation Settlement

# NEXT STEPS

# *Intertie Deviation Settlement* initiative stakeholder schedule

| Milestone | Date |
|---|---|
| *Post Issue Paper/Straw Proposal* | *August 15, 2018* |
| *Stakeholder Call* | *August 22, 2018* |
| *Stakeholder Written Comments Due* | *September 5, 2019* |
| *Post Straw Proposal* | *October 8, 2018* |
| *Stakeholder Meeting* | *October 15, 2018* |
| *Stakeholder Written Comments Due* | *October 29, 2018* |
| *Post Draft Final Proposal* | *December 12, 2018* |
| *Stakeholder Call* | *December 19, 2018* |
| Stakeholder Written Comments Due | January 8, 2019 |
| EIM Governing Body Meeting (advisory role) | January 24, 2019 |
| Board of Governors Meeting | February 6-7, 2019 |