EDAM

EXTENDED DAY-AHEAD MARKET

Technical Workshop – EDAM Transfer Revenue & Congestion Rent Allocation

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July 20, 2022

California ISO

Agenda – July 15, 2022

Time	Topic
8:00 - 8:15	Welcome and opening remarks
8:15 - 10:30	Transfer Revenue and Congestion Rent allocation
10:45 – 12:00	Transfer Revenue and Congestion Rent Sub-allocation

Reminders and Opening Remarks

- This workshop is designed stimulate open dialogue and leverage different perspectives with a goal of designing solutions to outstanding EDAM design issues.

- This call is being recorded for informational and convenience purposes only. Any related transcriptions should not be reprinted without ISO permission.

- If you need technical assistance during the meeting, please send a chat to the event producer.

- Thank you for joining us, and we look forward to an engaging discussion.

EDAM milestones

Q2

- April 28 — EDAM straw proposal published
- May 25 – 26 — EDAM stakeholder meeting (in-person and virtual)
- June 16 — Straw proposal comments due

Q3

- July 11-27 — EDAM technical workshops
- August 11 — Publication of revised straw proposal
- August 18/19 — Stakeholder meeting (revised straw)
- September 9 — Stakeholder comments (revised straw)
- Week of Sept. 12 — Publish draft tariff framework

Q4

- October 19 — Publication of draft final proposal
- November 2-3 — Stakeholder meeting (draft final)
- November 3 — Publish draft tariff language
- November 18 — Stakeholder comments (draft final and draft tariff)
- December 7 — Publish final proposal (and separately draft BRS)
- December 14 — Briefing to ISO Board and WEIM GB

2023 FERC filing (Q2), Implementation Activities (Fall 2023)

2024 EDAM Go-Live

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EDAM Transfer Revenue Technical Workshop

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Topics Covered

- Transfer Revenue Refresher
- Transfer Revenue and Congestion Rent Allocation
- Transfer Revenue and Congestion Rent sub-allocation

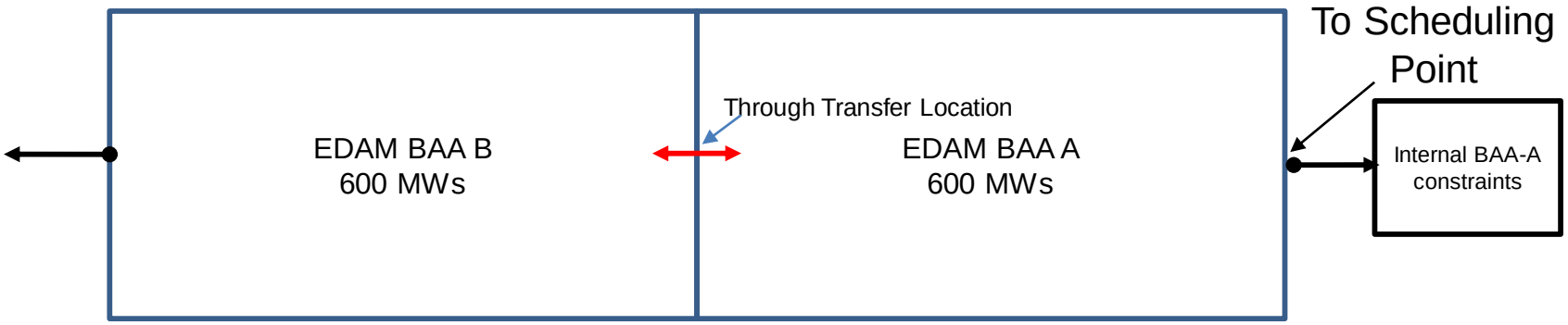
Transfer Revenue Refresher

- Bucket 1, Bucket 2, and Bucket 3 transmission made available to the EDAM is eligible for transfer revenue allocation
- Transfer revenue is collected when a transfer constraint binds and creates energy, imbalance reserve, or reliability capacity price differences between two BAAs
- Congestion rent is collected when a internal constraint binds and creates energy price differences between two BAAs
- Participants to provide input/feedback on the ISO proposed transfer revenue and congestion rent allocation methodology
  - Allocate transfer revenue 50:50 at a between EDAM BAAs, or
  - Transfer revenue is allocated to an EDAM BAA at a transfer point depending upon where the transfer constraint binds
  - Congestion Rents of internal constraints such as intertie constraints (ITC/ISL) shall be allocated to the BAA in which the constraint is defined

Transfer Revenue Discussion

- The ISO straw proposal made a distinction between the types of transfer location
  - Transfer Through: EDAM Entities provide transmission to an agreed upon transfer location between two scheduling points creating an internal intertie
  - Transfer Mixed: EDAM Entities provide transmission to an transfer location creating an internal intertie but also requires additional transmission to get a BAAs scheduling point
  - Transfer To: EDAM Entities provide transmission to an transfer location at BAA transfer point or scheduling point creating an internal intertie
- The next few slides will provide a refresher on the ISO original proposals distinction between transfer locations.
  - In addition, the examples will provide additional examples of the calculation of Transfer Revenue based upon these transfer location distinctions

Transmission “Through” Transfer Location

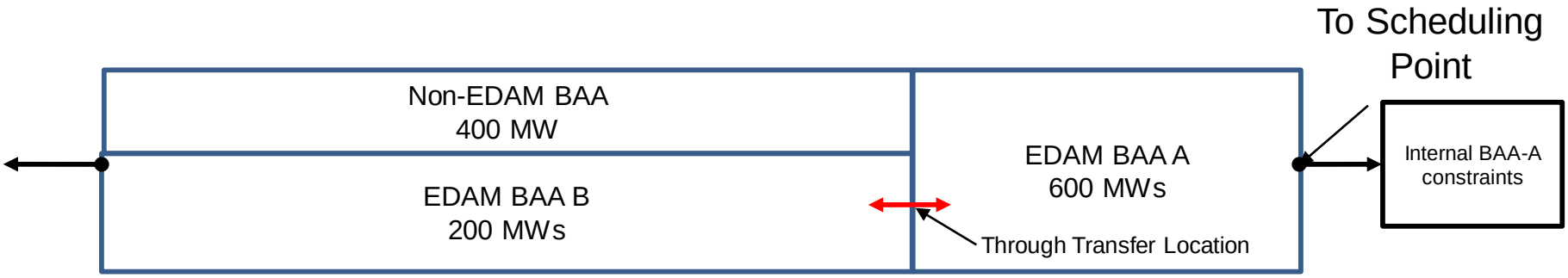


- EDAM Entities provide transmission to an agreed upon transfer location between two scheduling points creating an internal intertie (200 MW, 400 MW).

- EDAM Transfer does not compete with Non-EDAM intertie schedules from an external intertie.

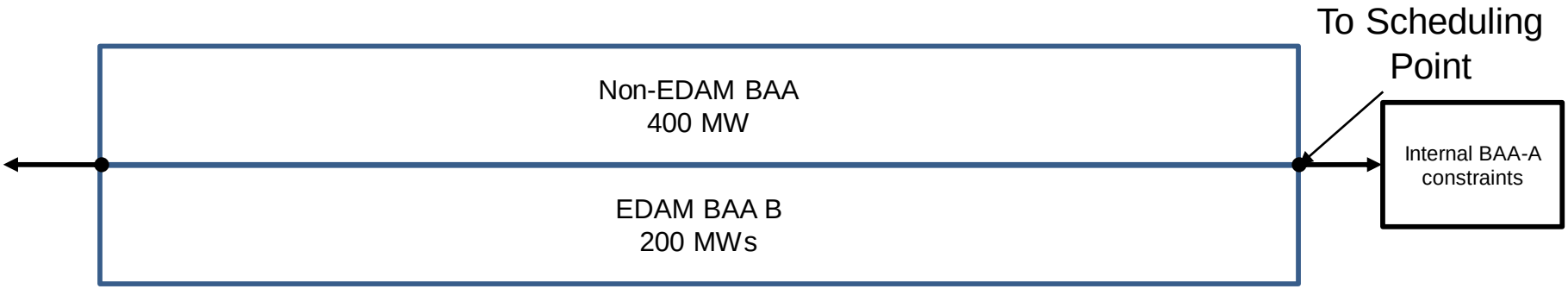
- Transfer Revenue from binding transfer constraint associated with the internal intertie is distributed between EDAM BAA A and EDAM BAA B entity to transmission providers at default proration value of 50:50, respectively.

Transmission “Mixed” Transfer Location



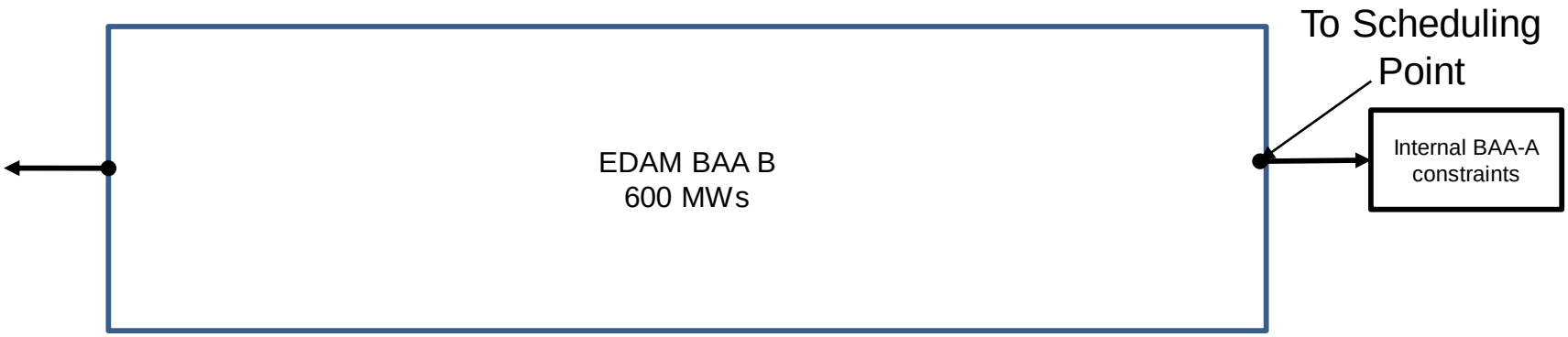
- EDAM Entities provide transmission to an transfer location creating an internal intertie (200 MW, 400 MW) and requires additional BAA A transmission to BAA A scheduling point.
- EDAM Transfer competes with Non-EDAM intertie schedules from an external intertie.
- Transfer Revenue from binding transfer constraint associated with the internal intertie is distributed between EDAM BAA A and EDAM BAA B entity or transmission providers at default proration value of 50:50, respectively.

Transmission “To” Transfer Location



- EDAM Entities provide transmission to an transfer location at BAA A scheduling point creating an internal intertie (200 MW, 400 MW).
- EDAM Transfer competes with Non-EDAM intertie schedules at that BAA A scheduling point from an external intertie.
- Transfer Revenue from binding transfer constraint associated with the internal intertie is distributed between EDAM BAA B receives 100% transfer revenue EDAM BAA A 100% internal constraint revenue.

Transmission “To” Transfer Location



- EDAM Entities provide transmission to an transfer location at EDAM BAA A scheduling point creating an internal intertie (600 MW).
- EDAM Transfer does not compete with Non-EDAM intertie schedules from an external intertie.
- Transfer Revenue from binding transfer constraint associated with the internal intertie is distributed between EDAM BAA B 100% of EDAM transfer revenue and EDAM BAA A receives 100% of internal EDAM BAA A constraint revenue.

Stakeholder Comments

- Stakeholder comments focused on two areas of the Transfer Revenue proposal:

1. Transfer Revenue and Congestion Rent allocation

2. Sub-allocation of Transfer Revenues by the EDAM BAA and transparency

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EDAM Transfer Revenue Technical Workshop - Examples

California ISO

Comments on Transfer Revenue and Congestion Rent Allocation

- Majority advocate for Transfer Revenue and Congestion Rent allocation to EDAM BAAs consistent across transfer location.
  - Transfer Revenue should be shared (50/50) between the two BAA
  - Congestion Rent from internal constraint should be allocated to the BAA in which constraint resides

- Some participants request the opportunity to review more examples before formulating an opinion

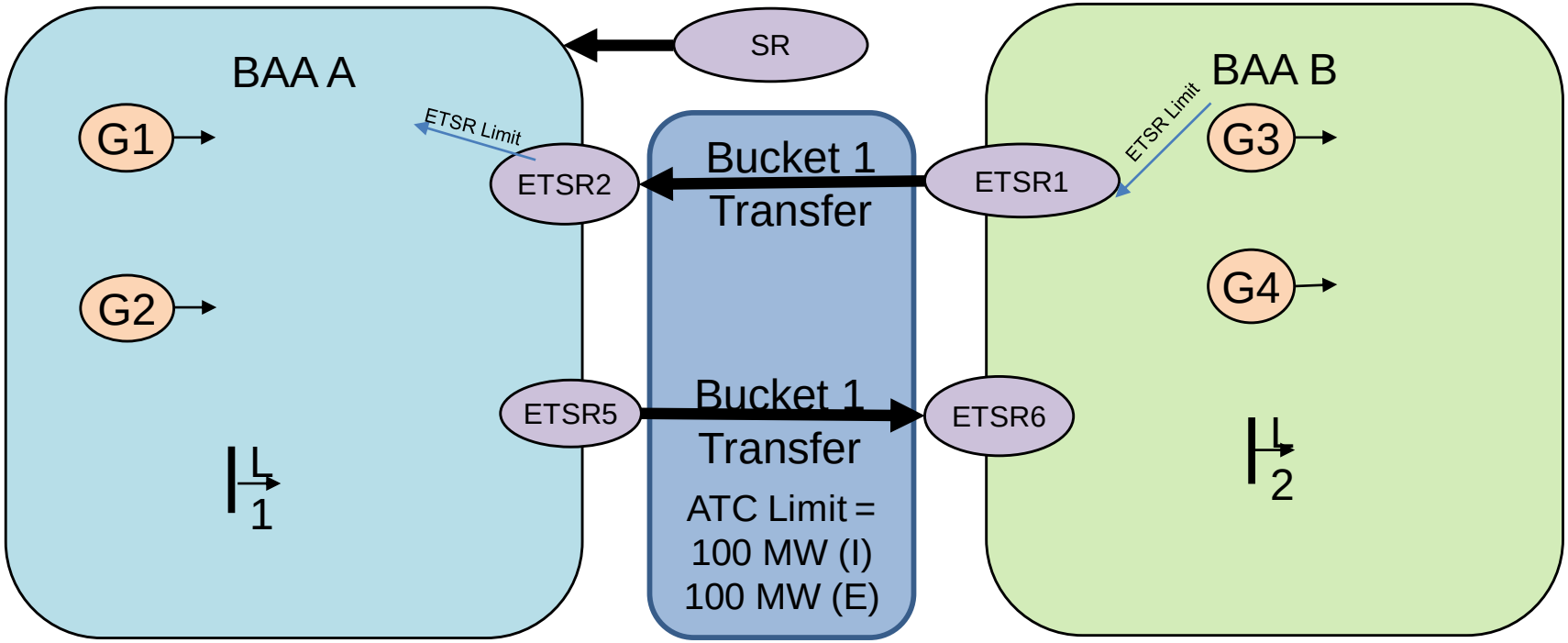
- A few participants support the current EDAM Transfer revenue proposal

Difference between Transfer Revenue and Congestion Rent Allocation

- Transfer revenue is collected when a transfer constraint binds and creates energy, imbalance reserve, or reliability capacity price differences between two BAAs

- Congestion rent is collected when a internal constraint binds and creates energy price differences between two BAAs
  - This includes intertie scheduling limit

Transfer Revenue Bucket 1 example



ATC (ITC)= 200 MWs (I)
100 MWs (E)

ATC (ITC) = 100 MWs(I)
100 MWs (E)

EDAM BID Data

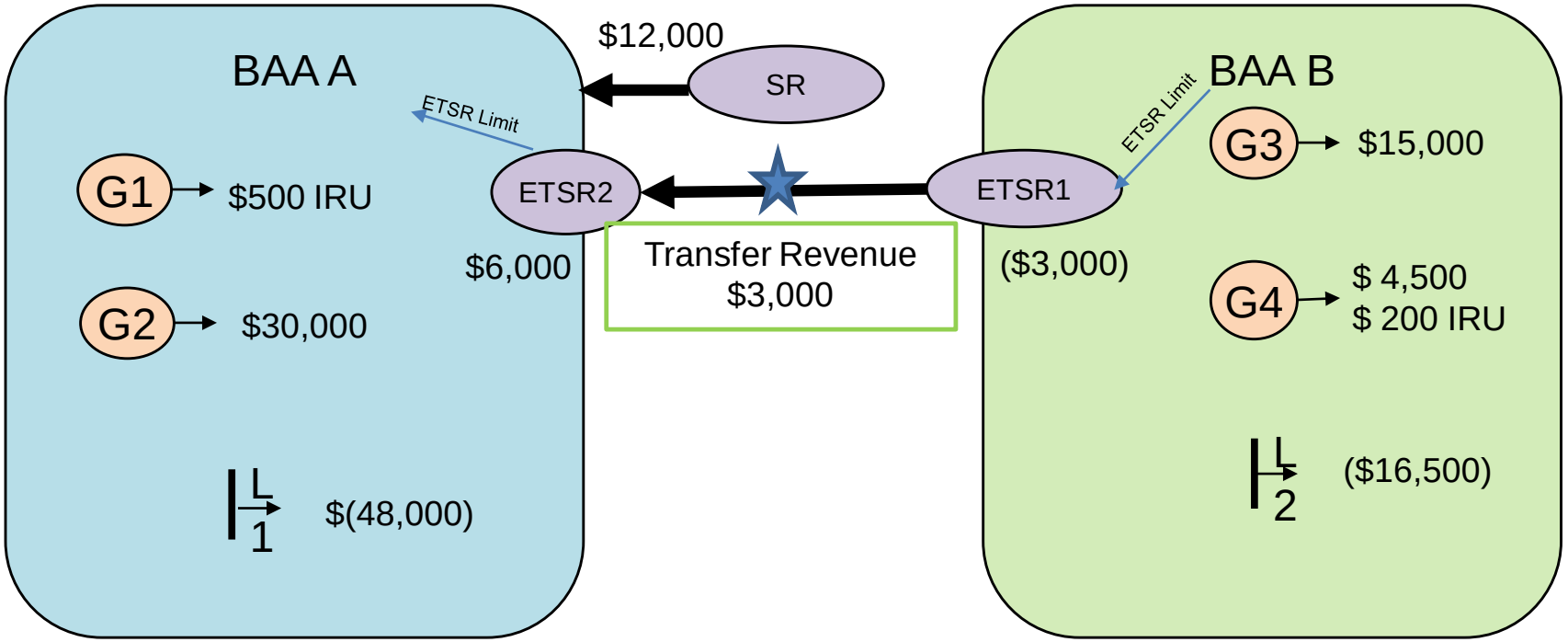
Resource	Pmax	Energy MW	Energy $	IRU MW	IRU $
SR		200			
G1	600	600	$60	100	$5
G2	500	500	$40	100	$4
L1	1000	800		100*	
G3	500	500	$20	100	$3
G4	500	500	$30	100	$2
L2	700	550		100*	
ETSR1-2	100				
ETSR5-6	100				

*IRU Requirement of 100 MWs

Integrated Forward Market Solution

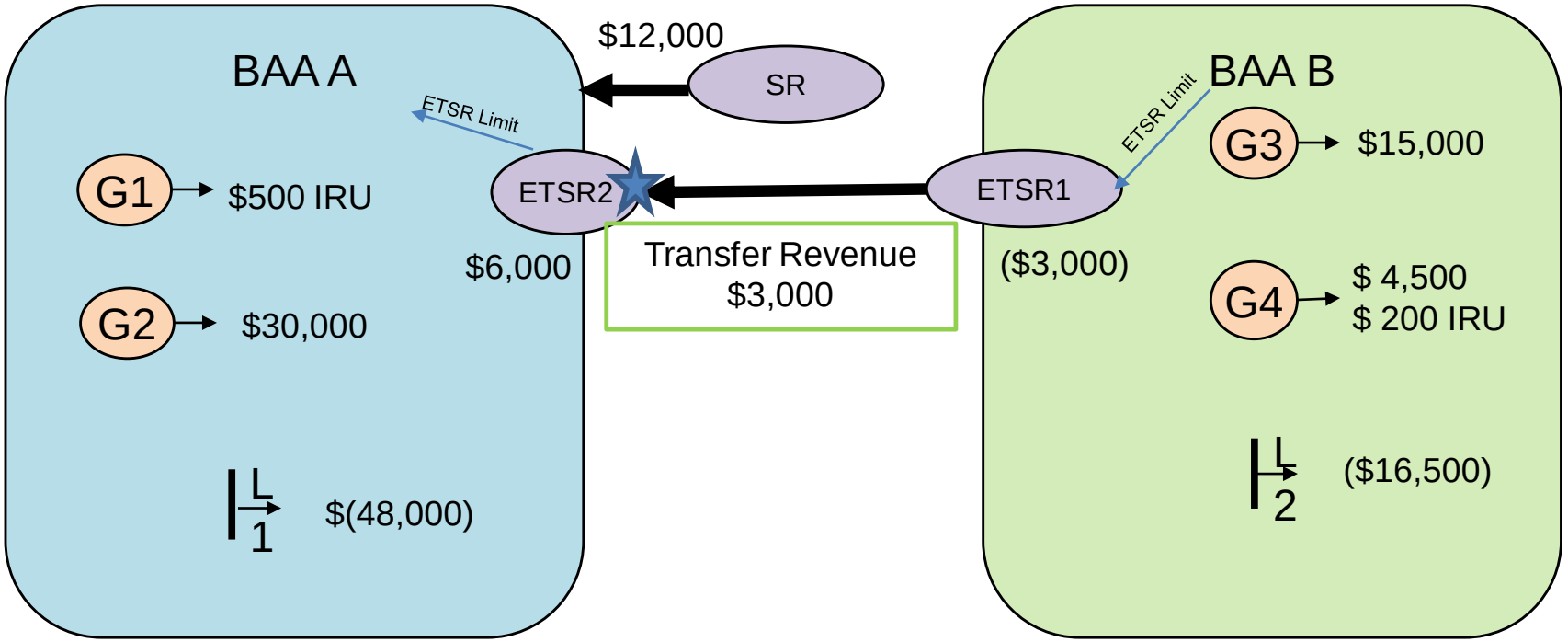
Resource	Energy MW	Energy $	IRU MW	IRU $
SR	200	$60		
G1			100	$5
G2	500	$60		
L1	800			
G3	500	$30		
G4	150	$30	100	$2
L2	550	$30		
ETSR1-2	100			
ETSR5-6				

Transfer “Through” Transfer Revenue Distribution



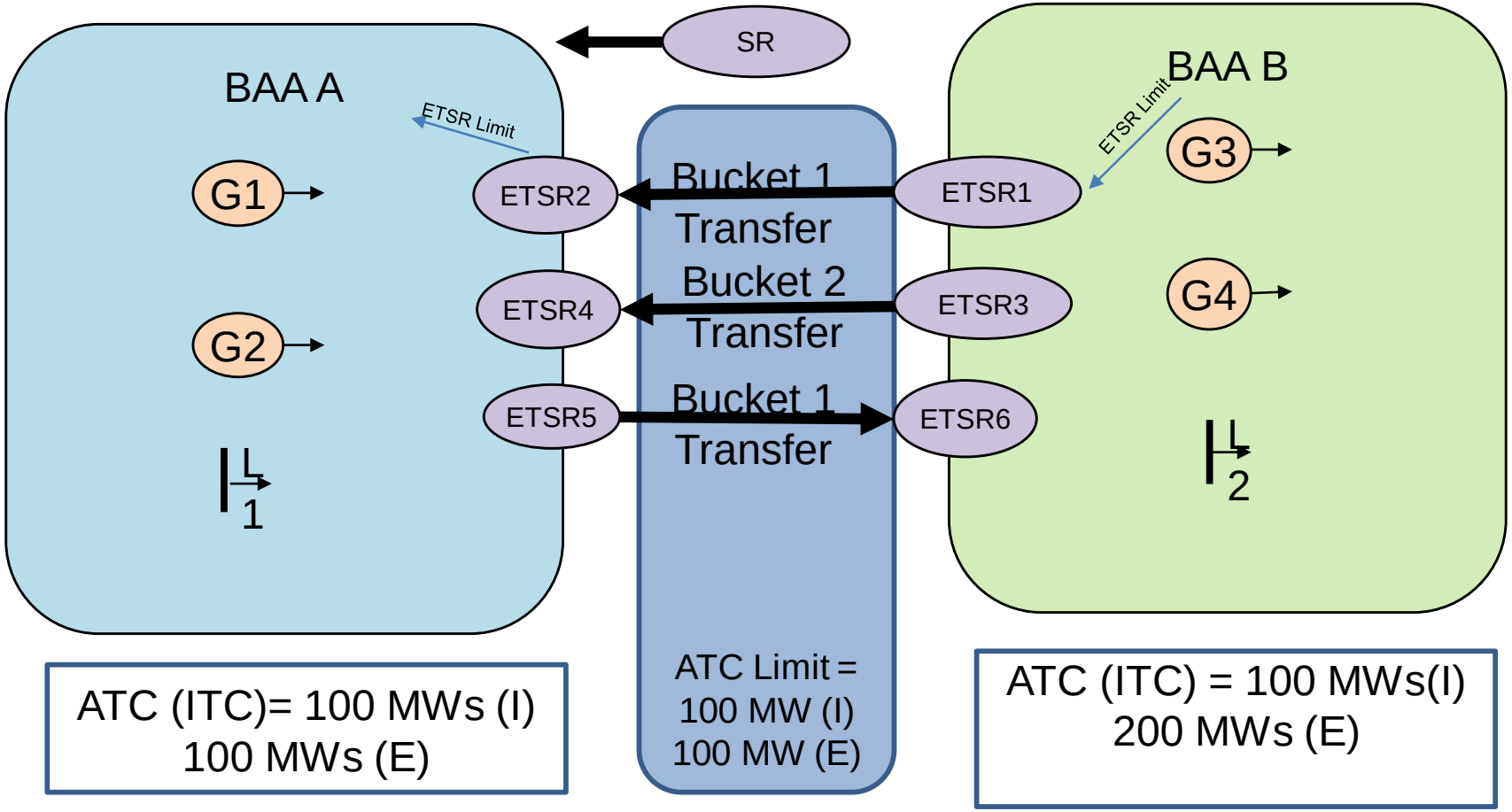
- Transfer location at the midpoint of the EDAM BAAs
- Transfer Revenue split between the two BAAs equally ($1,500)

Transfer “To” Transfer Revenue Distribution



- Transfer location at the transfer point/scheduling point of BAA A.
- Transfer Revenue split paid to BAA B @ $3,000 and BAA A @ $0

Transfer Revenue Bucket 2 example



EDAM BID Data

Resource	Pmax	Energy MW	Energy $	IRU MW	IRU $
SR		200	PT		
G1	600	600	$60	100	$5
G2	500	500	$40	100	$4
L1	1000	800 (75 TR)		100*	
G3	500	500	$20	100	$3
G4	500	500 (75 TR)	$30	100	$2
L2	700	550		100*	
ETSR1-2	100				
ETSR3-4	100	75 (TR)			
ETSR5-6	100				

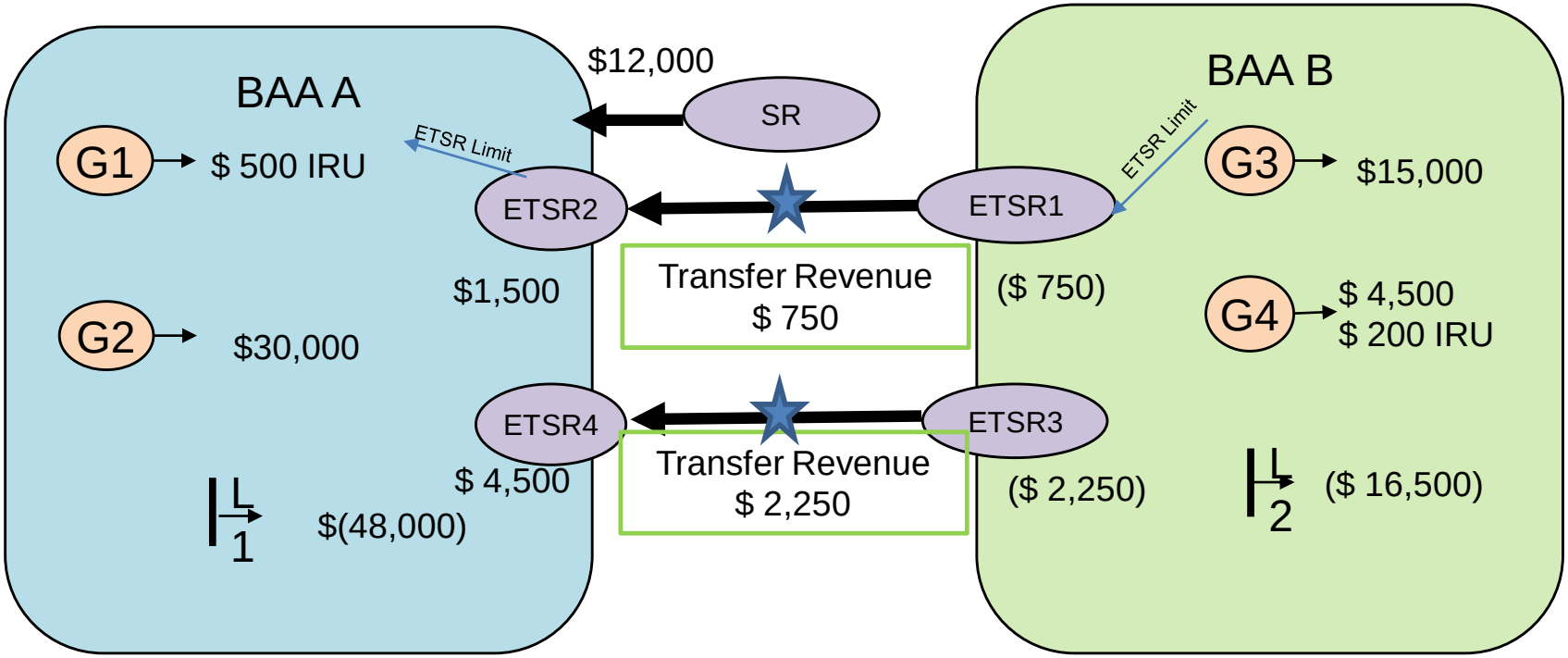
*IRU Requirement of 100 MWs

Integrated Forward Market Solution

Resource	Energy MW	Energy $	IRU MW	IRU $
SR	200	$60		
G1	0		100	$5
G2	500	$60		
L1	800			
G3	500	$30		
G4	150	$30	100	$2
L2	550	$30		
ETSR1-2	25			
ETSR3-4	75 TR			
ETSR5-6				

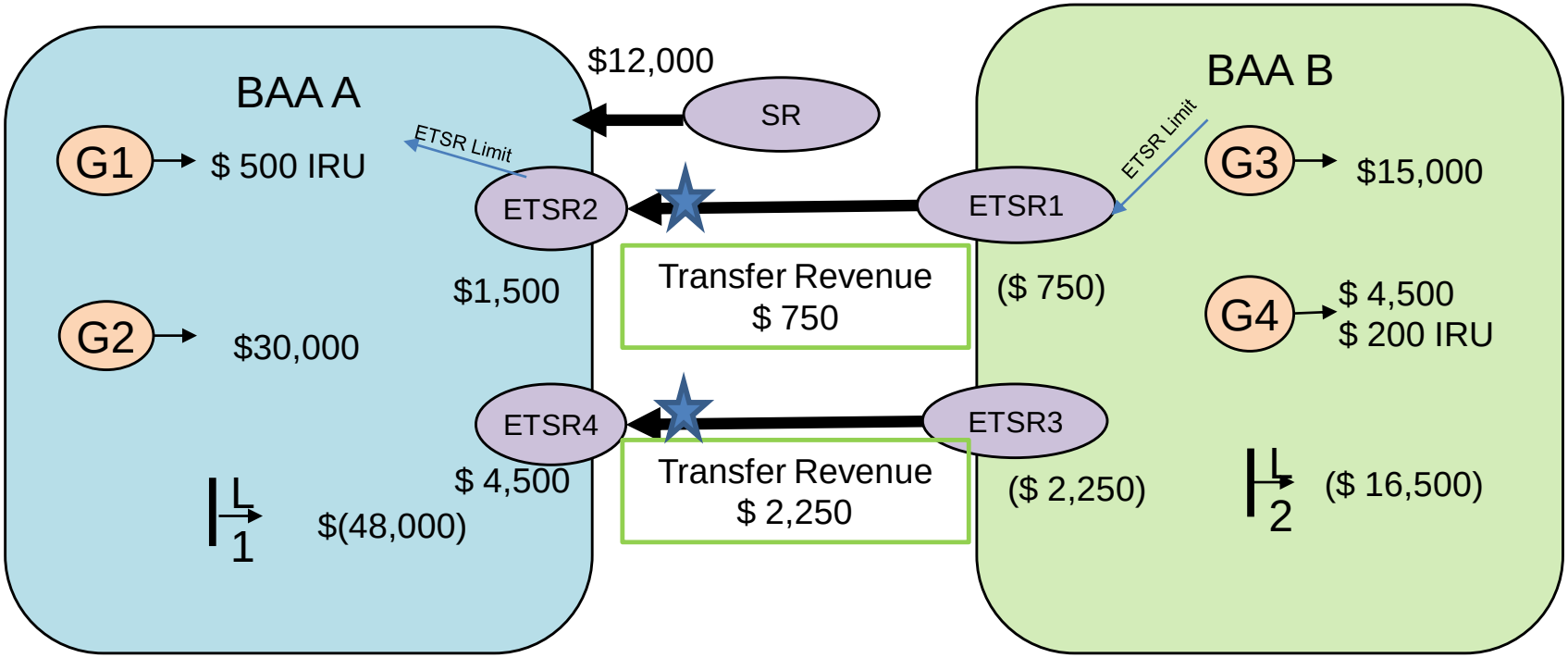
*IRU Requirement of 100 MWs

Transfer "Through" Bucket 2 Transfer Revenue Distribution



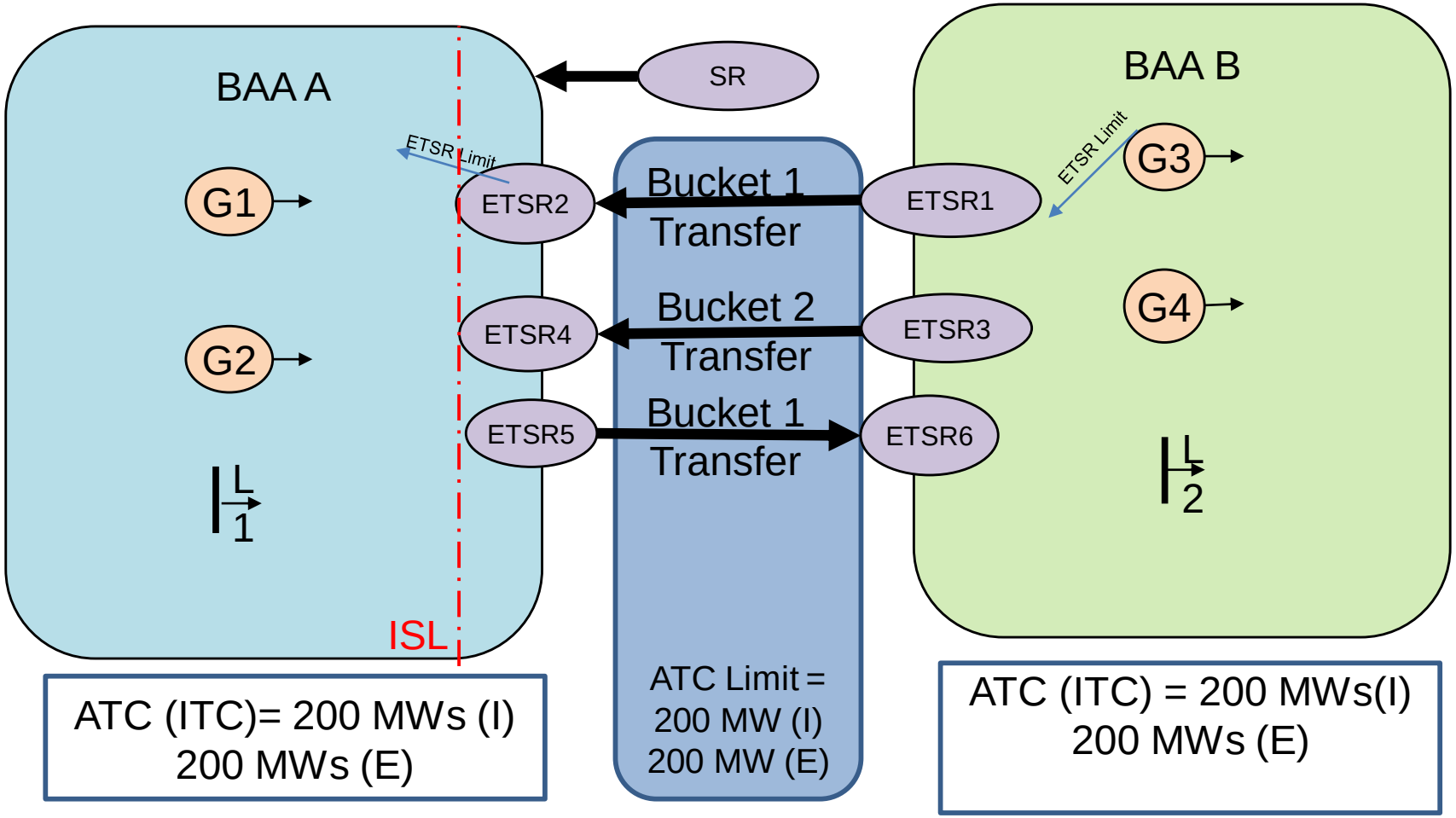
- Transfer location at the midpoint of the EDAM BAAs
- Transfer Revenue split between the two BAAs equally ($1,500)

Transfer “To” Bucket 2 Transfer Revenue Distribution



- Transfer location at the transfer point/scheduling point of BAA A.
- Transfer Revenue split paid to BAA B @ $3,000 and BAA A @ $0

ISL Binding Transfer Revenue example



EDAM BID Data

Resource	Pmax	Energy MW	Energy $	IRU MW	IRU $
SR		200	$50		
G1	600	600	$60	100	$5
G2	500	500	$40	100	$4
L1	1000	800 (75 TR)		100*	
G3	500	500	$20	100	$3
G4	500	500 (75 TR)	$30	100	$2
L2	700	550		100*	
ETSR1-2	100				
ETSR3-4	100	75 (TR)			
ETSR5-6	100				
ISL	300				

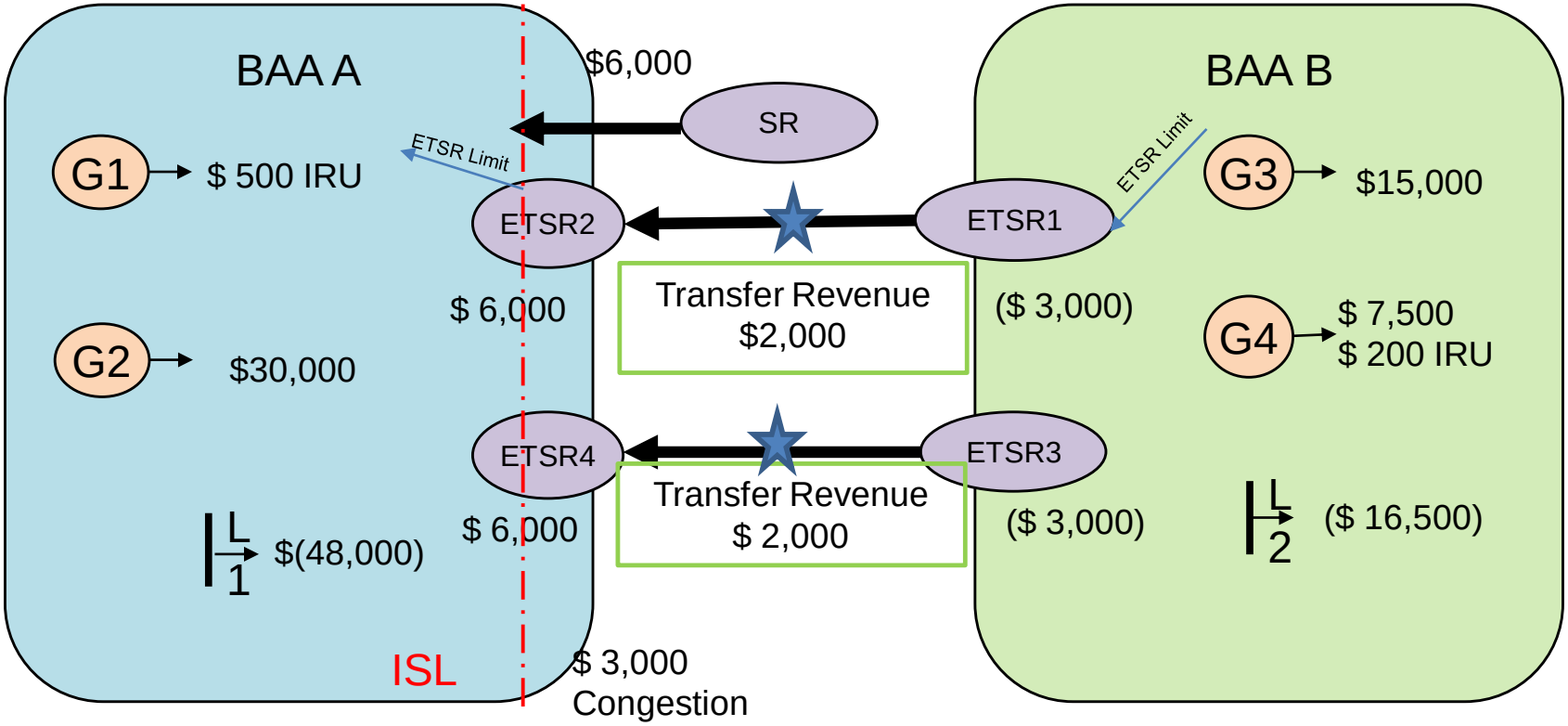
*IRU Requirement of 100 MWs

Integrated Forward Market Solution

Resource	Energy MW	Energy $	IRU MW	IRU $
SR	100	$60		
G1	0		100	$5
G2	500	$60		
L1	800			
G3	500	$30		
G4	250	$30	100	$2
L2	550	$30		
ETSR1-2	100			
ETSR3-4	100			
ETSR5-6				
ISL		$10*		

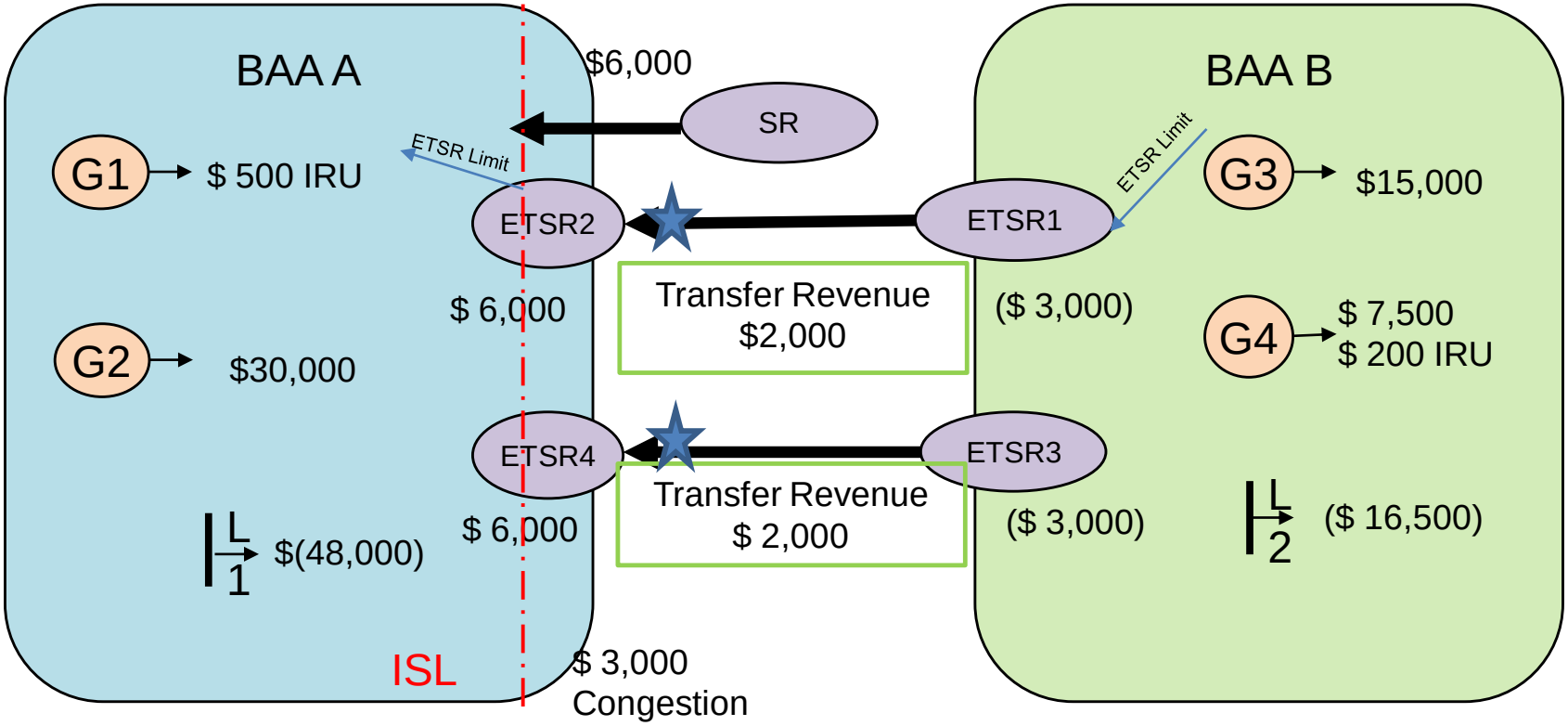
*$10 is the shadow cost of Binding ISL

Transfer “Mixed” Intertie Scheduling Limit Binds



- Transfer location at the midpoint of the EDAM BAAs
- Transfer Revenue split between the two BAAs equally ($2,000)
- Congestion Rent allocated to BAA A ($3,000)

Transfer “To” Intertie Scheduling Limit Binds



- Transfer location at the scheduling point of BAA A.
- Transfer Revenue split paid to BAA B @ $4,000 and BAA A @ $0
- Congestion Rent allocated to BAA A ($3,000)

Transfer Revenue Discussion

- Vast majority of comments advocate for Transfer Revenue and Congestion Rent allocation to EDAM BAAs consistent across transfer location.
  - Transfer Revenue should be shared (50/50) between the two BAA
  - Congestion Rent from internal constraint should be allocated to the BAA in which constraint resides

- Should EDAM proposal adopt this position, or
  - If we adopt this position, the Transfer Revenue in all the examples would be split 50/50

- Should the EDAM proposal maintain the distinction on the treatment of Transfer Revenue

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15 MINUTE BREAK

Returning back at 10:45am

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EDAM Transfer Revenue Sub-Allocation

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Comment on BAA Transfer Revenue and Congestion rent sub-allocation

- Stakeholders were divided
  - Some participants were supportive of allocating all the Transfer Revenue to the EDAM Entity. EDAM Entity would sub-allocate to customers based upon OATT provisions
  - Some participants believe the ISO should consider sub-allocating [transfer revenue] directly with the Transmission Customer

Transfer Revenue Sub-Allocation Refresher

- The Draft Straw Proposal recommends that the ISO allocate the Transfer revenue and congestion rent cost/revenues to the EDAM BAA
  - The transfer revenue should be allocated to transmission customer based upon the OATT
  - Creates consistent across EDAM and WEIL settlements
  - EDAM BAA has a higher visibility to Transmission Customer rights including sales
  - EDAM BAA can ensure the transmission customer is paid accordingly

Transfer Revenue Sub-allocation discussion

- Based upon stakeholder comments, this portion of the technical workshop should focus
  - Who should sub-allocate the Transfer Revenue to Transmission Customers for use of their transmission
    - Should the revenue be allocated to EDAM BAA for sub-allocation based upon OATT, or
    - Should ISO sub-allocate directly to Transmission Customer

- Should Transfer Revenue of market optimized unscheduled transmission be allocated to EDAM BAA or Transmission Customer

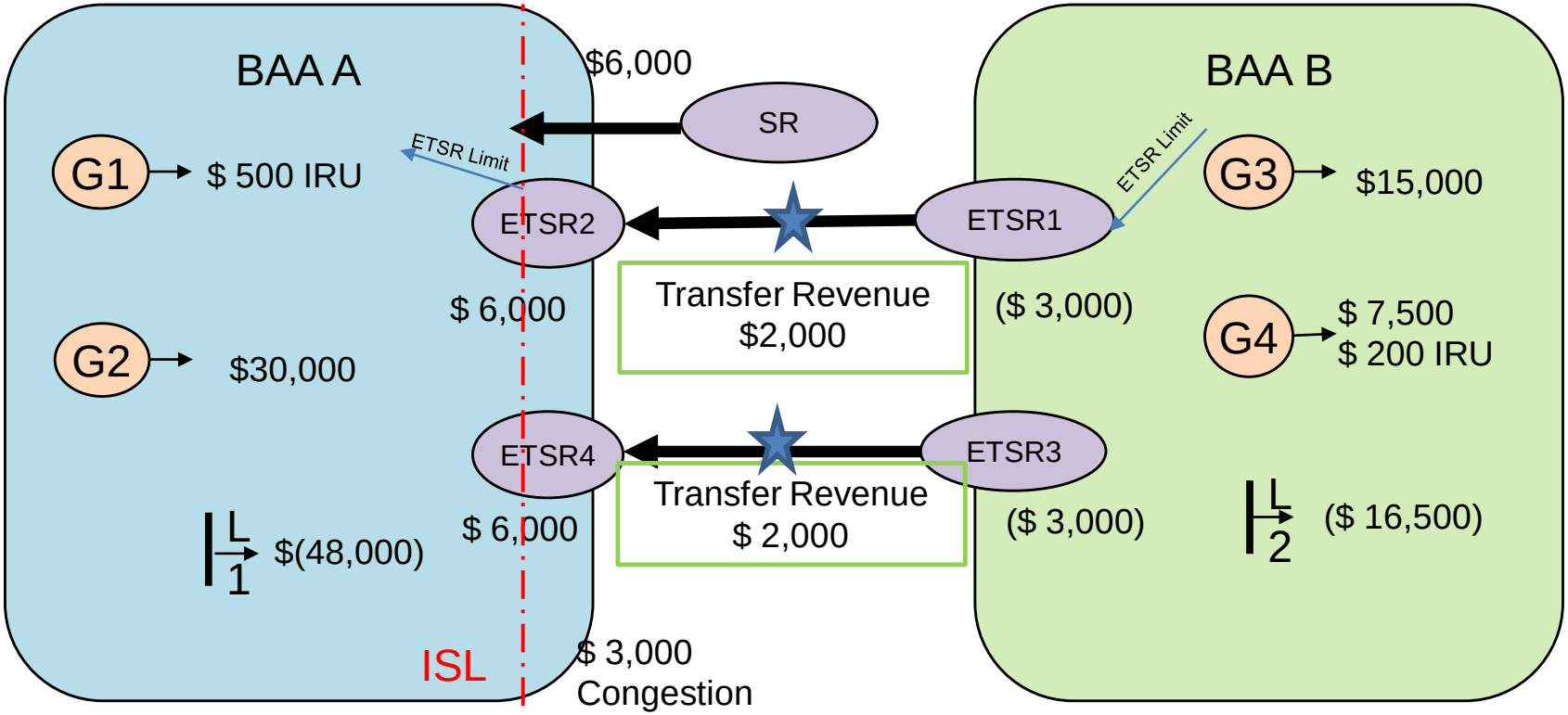
- Should congestion rents be allocated to EDAM BAA or directly sub-allocated to Transmission Customers or measured demand
  - CAISO congestion rents are allocated to CRRs first and then measured demand

Integrated Forward Market Solution

Resource	Energy MW	Energy $	IRU MW	IRU $
SR	100	$60		
G1	0		100	$5
G2	500	$60		
L1	800			
G3	500	$30		
G4	250	$30	100	$2
L2	550	$30		
ETSR1-2	100			
ETSR3-4	100			
ETSR5-6				
ISL		$10*		

*$10 is the shadow cost of Binding ISL

Intertie Scheduling Limit Binds



- Who should receive the ETSR3-4 Transfer Revenue allocation?
  - ESTR3-4 has 75 MWs self-scheduled by transmission customer and 25 MWs optimized by the market
- Who should receive the congestion rents allocation?

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Next Steps

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July 2022 EDAM Workshop Schedule

Date/Time	Format	Focus
July 26, 2022 (9 a.m. – 5 p.m. Mountain Time)	In-person and virtual Salt Lake City, UT	(1) Confidence in transfers (2) GHG accounting (3) Day-Ahead RSE and transmission (recap/review from prior workshops)
July 27, 2022 (9 a.m. – 12 p.m. Mountain Time)	In-person and virtual Salt Lake City, UT	GHG accounting

- The ISO is pleased to be hosting the Stakeholder Symposium in-person at the Safe Credit Union Convention Center in downtown Sacramento on Nov. 9 – 10, 2022

- Register on the Stakeholder Symposium page at: https://californiaiso.swoogo.com/2022StakeholderSymposium

- Please direct questions to symposiumreg@caiso.com