

# Transmission in the EIM

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EIM Regional Issues Forum

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# Transmission Options in EIM



## **Interchange Rights Holder:**

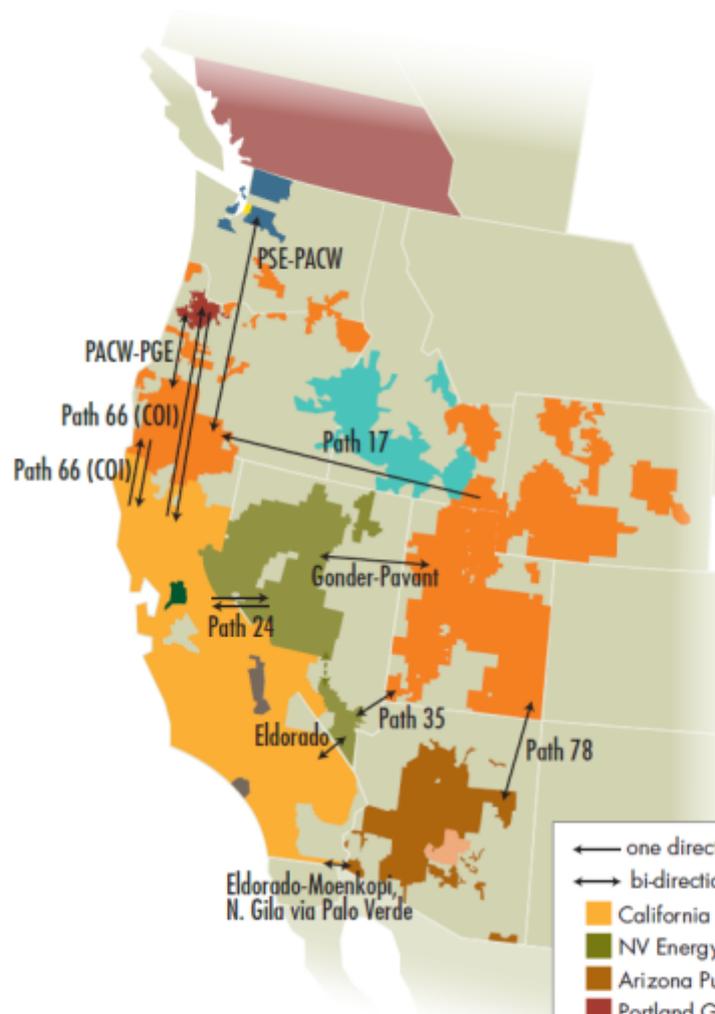
- The transmission customer offers its reserved firm transmission rights as capacity for EIM transfers.
- Provides a definite amount of capacity to support EIM transfers.

## **Available Transfer Capability:**

- After the window closes for all transmission customers to schedule their reserved transmission, any unscheduled capacity remaining is made available for EIM transfers.
- Under this method, the amount of firm transmission capability available for EIM transfers varies.

## **Hybrid:**

- The EIM Entity's OATT allows both methods described above.
- PGE utilizes the hybrid approach.



Path	Estimated Max Capacity (MW)*
Path 24 (west to east)	100
Path 24 (east to west)	35-90
Eldorado	1,500
Path 35 (west to east)	580
Path 35 (east to west)	538
Gonder-Pavant	130
PACW to PGE	320
Path 66 (ISO to PGE)	627
Path 66 (PGE to ISO)	296
Path 66 (ISO to PACW)	331
Path 66 (PACW to ISO)	432
Path 17	200
PSE to PACW	300
Eldorado, Moenkopi, N. Gila, Palo Verde	2,500
Path 78	600

\*Current as of November 2017

← one direction  
 ↔ bi-directional

California ISO	PacifiCorp
NV Energy	Puget Sound Energy
Arizona Public Service	
Portland General Electric	
Idaho Power Company (planned entry 2018)	
Powerex (planned entry 2018)	
Seattle City Light (planned entry 2019)	
BANC/SMUD (planned entry 2019)	
Los Angeles Dept. of Water & Power (planned entry 2019)	
Salt River Project (planned entry 2020)	

# PGE EIM Bilateral Trading Experience

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# PNW Bilateral Trading (w. EIM)

- Day-Ahead
  - ICE
  - On/Off-Peak
  - Super-Peak
  - CAISO
- Intra-Day
- Hour-Ahead
  - CAISO
  - NW Bilateral (I-TAP, Phone)
- EIM
  - 15-Min Market
  - 5-Min Market
- Intra-Hour
  - BPA Committed Intra Hour VERs Balancing
  - 15-min Scheduling (I-TAP, Phone)
  - CAISO
  - Emergency Tags

# Western EIM Timelines

T-75: Base schedules and energy bids due

T-55: Updated base schedules submitted

T-40: Final opportunity to submit base schedules (Entity SC)

T-20: E-tagging deadline (Entity SC)

EIM Market Participants

15-minute dispatch intervals (4.5 hour look-ahead)

X:00 X:15 X:30 X:45 Y:00

5-minute dispatch intervals (65-minute look-ahead)

T-22.5: 15-minute scheduled awards published

T-37.5: Start of Market 1 optimization

T-45: Results of sufficiency test published

Market Operator

T-60: Results of sufficiency test published (Balanced? Feasible transmission? Sufficient flexible ramping?)

(T = start of the hour)

# EIM Bilateral Trading Considerations

- Price risk
  - Expected EIM settlement
  - Bid-Ask and/or basis spread in bilateral market
- Transmission availability
- Participating Resource Scheduling Coordinator workload
  - Varies by entity
- Transmission Service Provider (TSP) workload
  - EIM Entity TSP, ETSR TSP

# PGE EIM Bilateral Trading Today

- No longer in BPA Committed Intra-Hour program
- Growing experience with EIM
- Expect hourly bilateral trading to increase
  - Prior to base schedule submission
  - Post base schedule submission
  - Increased price and volume volatility
- Looking forward to forecasted ISO “technology enhancements” to shorten real-time market timelines

# Questions?