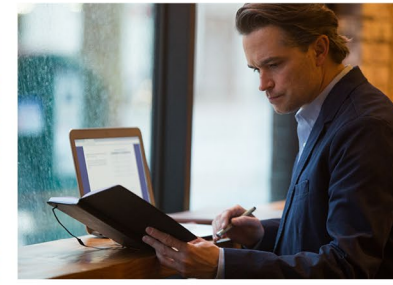


# Brattle Group EDAM Study

Michael Wilding – Vice President, Energy Supply Management

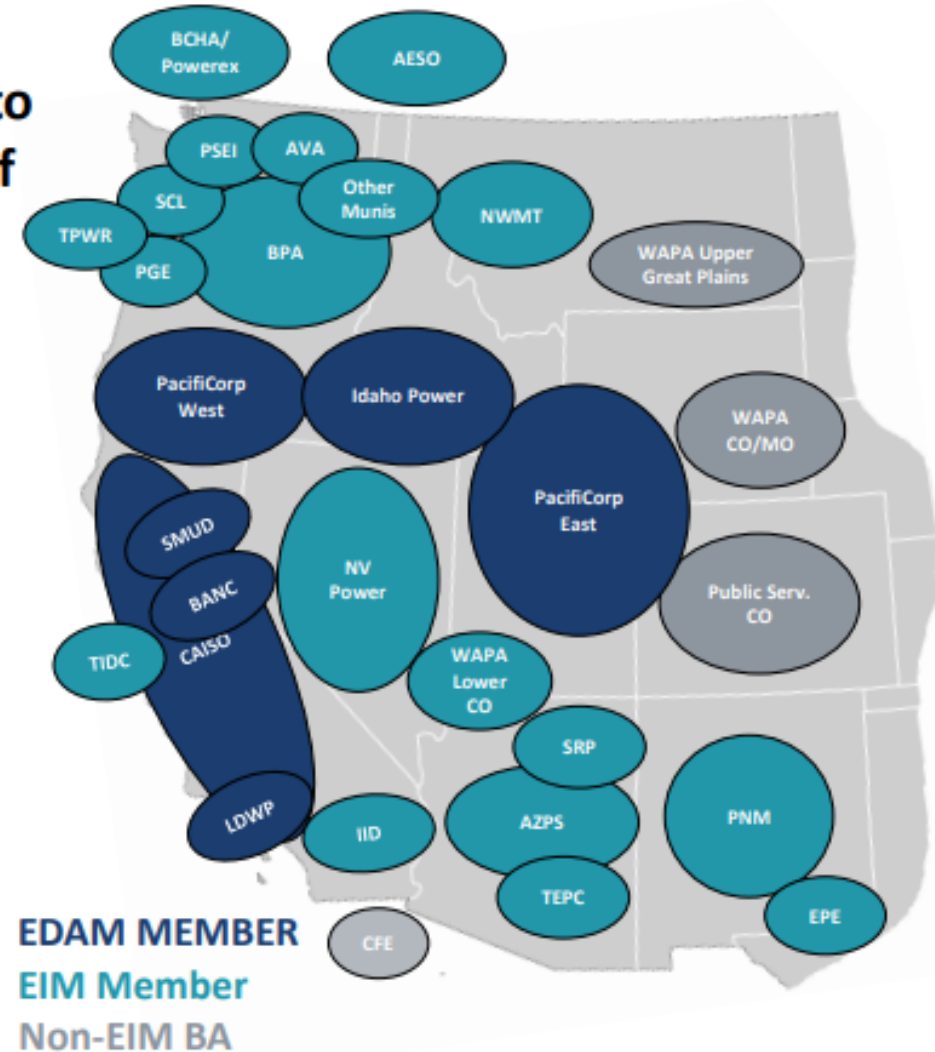


# Modeling Assumptions: EDAM Footprint and Study Year

Simulations are based on 2032 as a proxy year to represent annual benefits for the first decade of EDAM operations

The simulated EDAM footprint includes:

- **PacifiCorp**, broken into PAC-East (PACE), PAC-West (PACW), and PAC-West in Washington (PAWA)
- The **California ISO (CAISO)**
- **Idaho Power (IPCO)**
- **Los Angeles Department of Water and Power (LADWP)**
- The **Balancing Authority of Northern California**
  - Broken into SMUD (Sacramento) and Rest of BANC



<https://www.brattle.com/insights-events/publications/brattle-edam-simulations-pacifiCorp-results/> slide 12

# Summary of 2032 EDAM Footprint-Wide Benefits

The assumed EDAM footprint (incl. CAISO) is estimated to see gross benefits of \$810 million/year, with net benefits estimated at \$438 million.

Benefits driven by 50 TWh increase in day-ahead trades between the assumed EDAM participants, with significant EDAM congestion and transfer revenues

EDAM Benefits (\$ millions/year)

Benefit Metric	Modeled EDAM Footprint
<b>EDAM Benefits</b>	
Adjusted Production Cost Savings	\$134
EDAM Congestion Revenues	\$269
EDAM Transfer Revenues	\$409
<b>Total EDAM Benefits</b>	<b>\$813</b>
<b>Other EDAM Related Impacts</b>	
Impact on Wheeling Revenues	-\$103
TRR Settlements [1]	\$0
Impact on EIM Congestion Revenues	-\$16
Impact on CAISO DA Tieline Trading Value	-\$57
Reduced Bilateral Trading Value [2]	-\$199
<b>Net EDAM Benefits</b>	<b>\$438</b>

*Notes:*

[1] TRR settlements (hold harmless for lost wheeling revenues) are zero for footprint

[2] Reduced bilateral trading values of exports and imports from the BAs of EDAM members, includes impacts on trades by third-party marketers.

# PacifiCorp's EDAM Benefits

**PacifiCorp sees a total EDAM gross benefit of \$339 million**

PAC's benefit is driven by several factors:

- Significant EDAM transfer and congestion revenues
  - PAC is the **most transmission connected entity** in EDAM, with connections to **95%** of the modeled EDAM load (missing only BANC/SMUD)
- Large gains in sales revenues from PAC's highly competitive thermal units, especially gas
- A competitive resource mix
- Savings in purchases of inexpensive solar from CAISO/LADWP

EDAM Benefits (\$ millions/year)				
Benefit Metric	PACE	PACW	PAWA	PacifiCorp Total
<b>EDAM Benefits</b>				
Adjusted Production Cost Savings	\$54	\$8	\$2	\$64
EDAM Congestion Revenues				\$37
EDAM Transfer Revenues				\$238
<b>Total EDAM Benefits</b>				<b>\$339</b>
<b>Other EDAM Related Impacts</b>				
Reduced Wheeling Revenues				\$8
TRR Settlements [1]				-\$6
Impact on EIM Congestion Revenues				-\$12
Impact on CAISO DA Tieline Trading Value				-\$1
Reduced Bilateral Trading Value [2]				-\$147
<b>Net EDAM Benefits</b>				<b>\$181</b>

Notes:  
 [1] TRR settlements are based on 2021 short-term wheeling revenues. If based on 2032 modeled revenues, this value is a loss of \$17 million instead of \$9 million.  
 [2] Reduced bilateral trading values of exports and imports from the BAs of EDAM members, includes impacts on trades by third-party marketers.



# GHG Emission Reductions: EDAM vs. Base Case

**EDAM reduces emissions: both within the GHG-regions of EDAM and the remaining EDAM footprint, as well as within EIM and WECC-wide**

Simulations show that EDAM’s GHG design (incl. its reference pass methodology) successfully prevents significant resource reshuffling, resulting in:

- Reduced renewable generation curtailments, particularly in high-renewable areas such as CAISO
- Switching from less efficient gas units to more efficient gas units within the EDAM footprint
- WECC-wide, coal generation falls by 200 GWh
- PacifiCorp-, EDAM-, EIM-, and WECC-wide decreases of GHG emissions

Total Emissions in Million Metric Tons (2032)

Case	EDAM			WECC		PacifiCorp			
	EDAM GHG Region	EDAM Non-GHG	Total EDAM	Total EIM	Total WECC	PAWA	Rest of PACW	PACE	Total PAC
Base Case	16.31	19.31	35.62	125.37	170.70	0.12	2.06	15.96	18.14
EDAM Case	15.78	19.20	34.98	125.13	170.42	0.04	1.15	16.91	18.10
<b>EDAM - Base</b>	<b>-0.54</b>	<b>-0.11</b>	<b>-0.65</b>	<b>-0.24</b>	<b>-0.29</b>	<b>-0.08</b>	<b>-0.91</b>	<b>0.95</b>	<b>-0.04</b>

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# Questions