

# **Injection / Withdrawal Transmission Cost Allocation**

OMS Cost Allocation and Regional Planning  
August 18, 2009

# Injection / Withdrawal Method

## What it is:

Replacement of the current rate schedules for network service, point-to-point service and network upgrade charges with a single transmission pricing method.

A flexible methodology that can strike a balanced position on the following polarities:

Interregional vs. Local Transmission

Transmission Access vs. Usage

Cost causer vs. beneficiary

Granularity vs. Complexity of Methodology

Injection into vs. Withdrawal from system

Allocation of pre-RTO costs vs. Allocation of incremental costs

## What it is not:

A method to determine eligibility criteria for transmission facilities that are to be cost shared.

# Transmission System Types

## Local

A portion of the transmission system is installed to facilitate the delivery of energy from local generation to local load within a specific area **and** provide access to the overall transmission grid

This portion of the transmission system provides access benefits to generation and load


Local transmission benefiting local generation and load is analogous to State highways benefiting travelers within a single State

## Interregional

A portion of the transmission system is installed to facilitate the benefits of interregional energy delivery: production cost savings, increased reliability, renewable generation integration, lower planning reserve margins, etc.

This portion of the transmission system provides usage benefits to all generation, load, imports, exports and wheel-through transactions that use the interregional transmission system

Interregional transmission is analogous to the Interstate highway system



Any specific transmission facility may have both local and interregional characteristics  
Designation becomes a question of percentage of revenue requirements more than designation of facility

# Potential Transmission Charge Types

## Local Access Charge

Local transmission service and access to interregional facilities

Could apply to generation and load in specific local area

Could be a capacity-based charge tied to local installed capacity and peak demand

## Interregional Usage Charge

Use of interregional facilities

Could apply to all generation, load, imports, exports and wheel-through transactions

Could be energy-based charge applied to MWh injections and MWh withdrawals

## Interregional Access Charge

Access to interregional facilities for external transactions

Could apply to imports, exports and wheel-through transactions

Could be energy-based or reservation-based charge applied to external transactions.

# Preliminary Injection / Withdrawal Analysis 2015 Case

Based on 2014 test year data

Includes 2009 Attachment O, Schedule 26 and MTEP 08 Appendix A projects

Includes MTEP 08 generation assumptions

Three charge type scenarios evaluated

Local Access and Interregional Usage

Local and Interregional Usage

Local and Interregional Access

Two layers assumed (Local and Interregional)

Local areas correspond to existing pricing zones

Local layer include facilities < 345 kV (2009 Att. O and Sch. 26 projects meeting the criteria)

Interregional layer includes facilities  $\geq$  345 kV

All pre-RTO costs (2009 Attachment O) assigned to local layer

Cost impacts evaluated by pricing zone

# Preliminary Injection / Withdrawal Analysis 2025 Case

Based on 2024 test year data

Includes 2015 case transmission and 2024 reference future overlay

Includes 2024 generation

One charge type scenarios evaluated

Local Access and Interregional Usage

Local Usage and Interregional Usage

Local Access and Interregional Access

Two layers assumed (Local and Interregional)

Local areas correspond to existing pricing zones

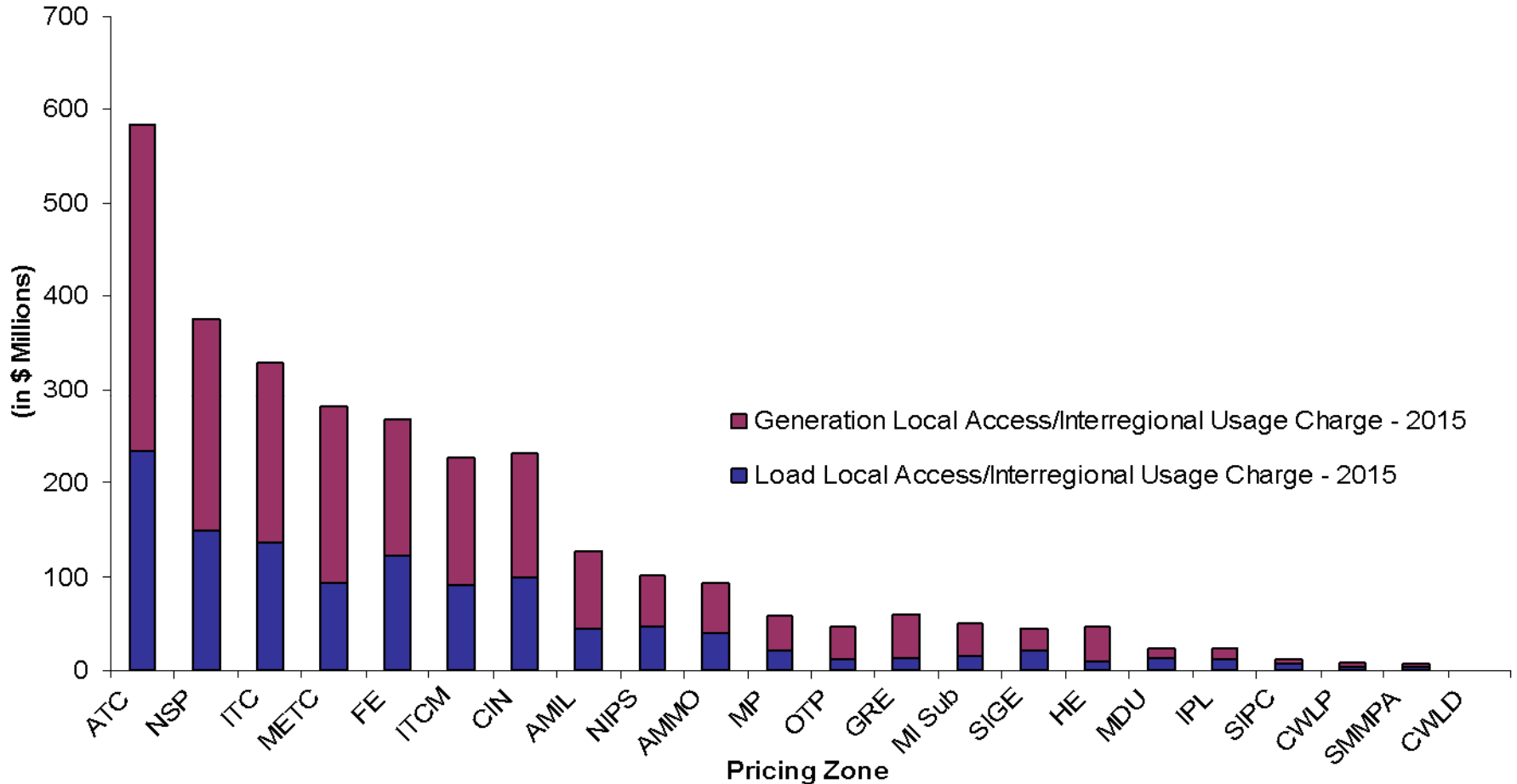
Local layer include facilities < 345 kV

Interregional layer includes facilities  $\geq$  345 kV

All pre-RTO costs (2009 Attachment O assigned to local layer)

Cost impacts evaluated by pricing zone

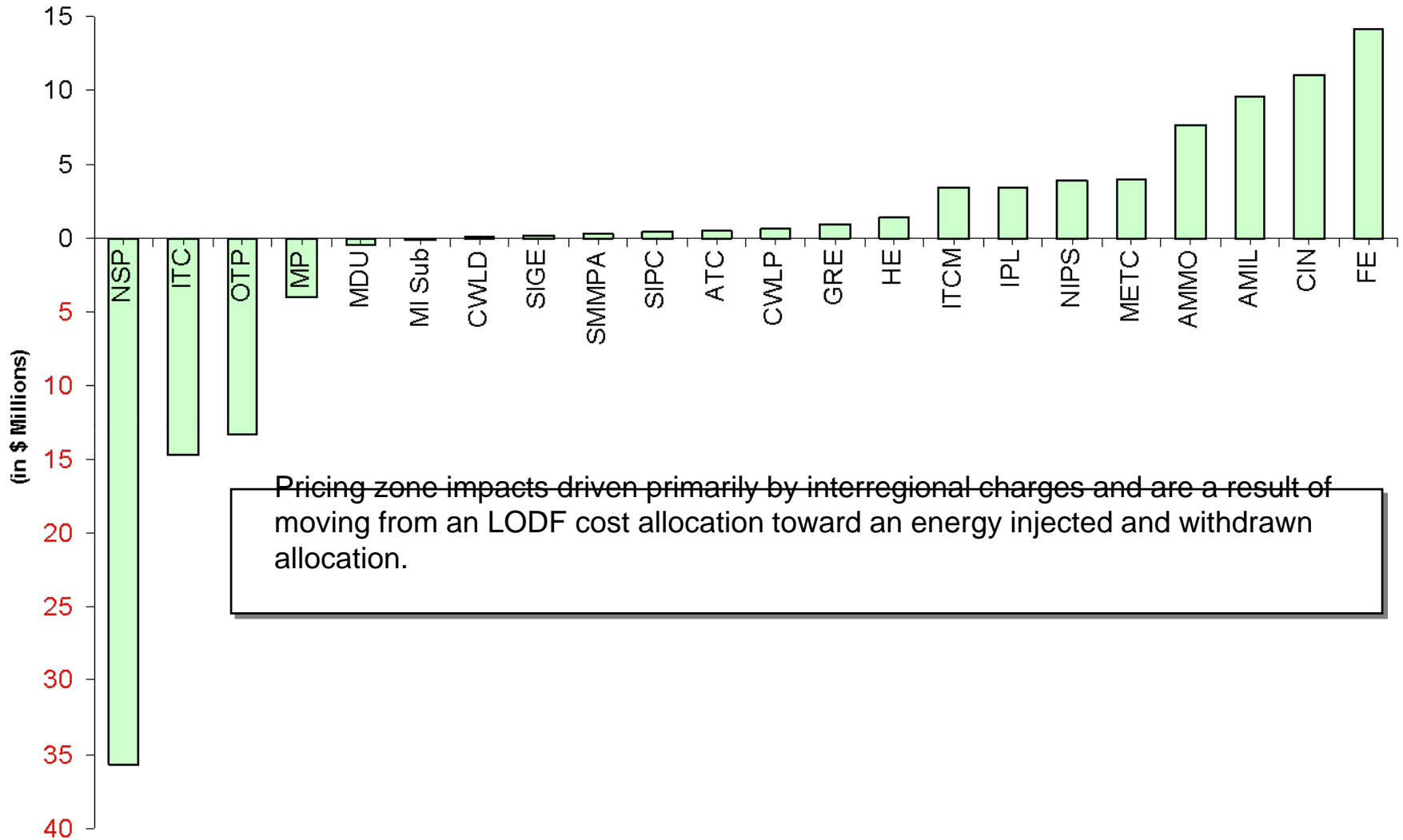
## Local Access and Interregional Usage Charges



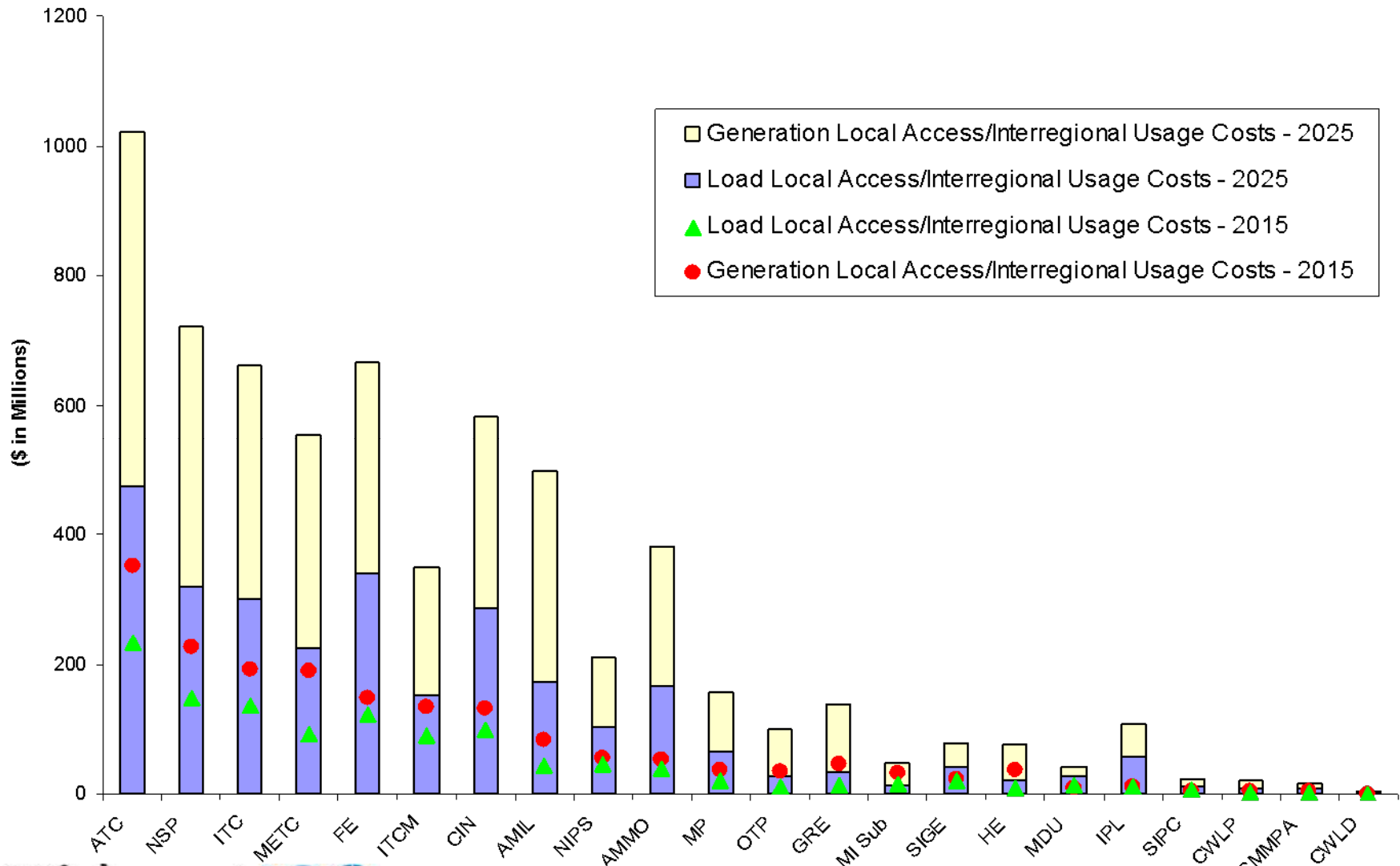
\* 2015 Current Tariff Revenue Requirements include 2009 Attachment O - \$2.3.  
 MTEP08 Appendix A projects - \$400 million and Sch. 26 projects - \$325 million

\* Not shown is the \$7 million allocated through the Interregional Usage charge for external transactions

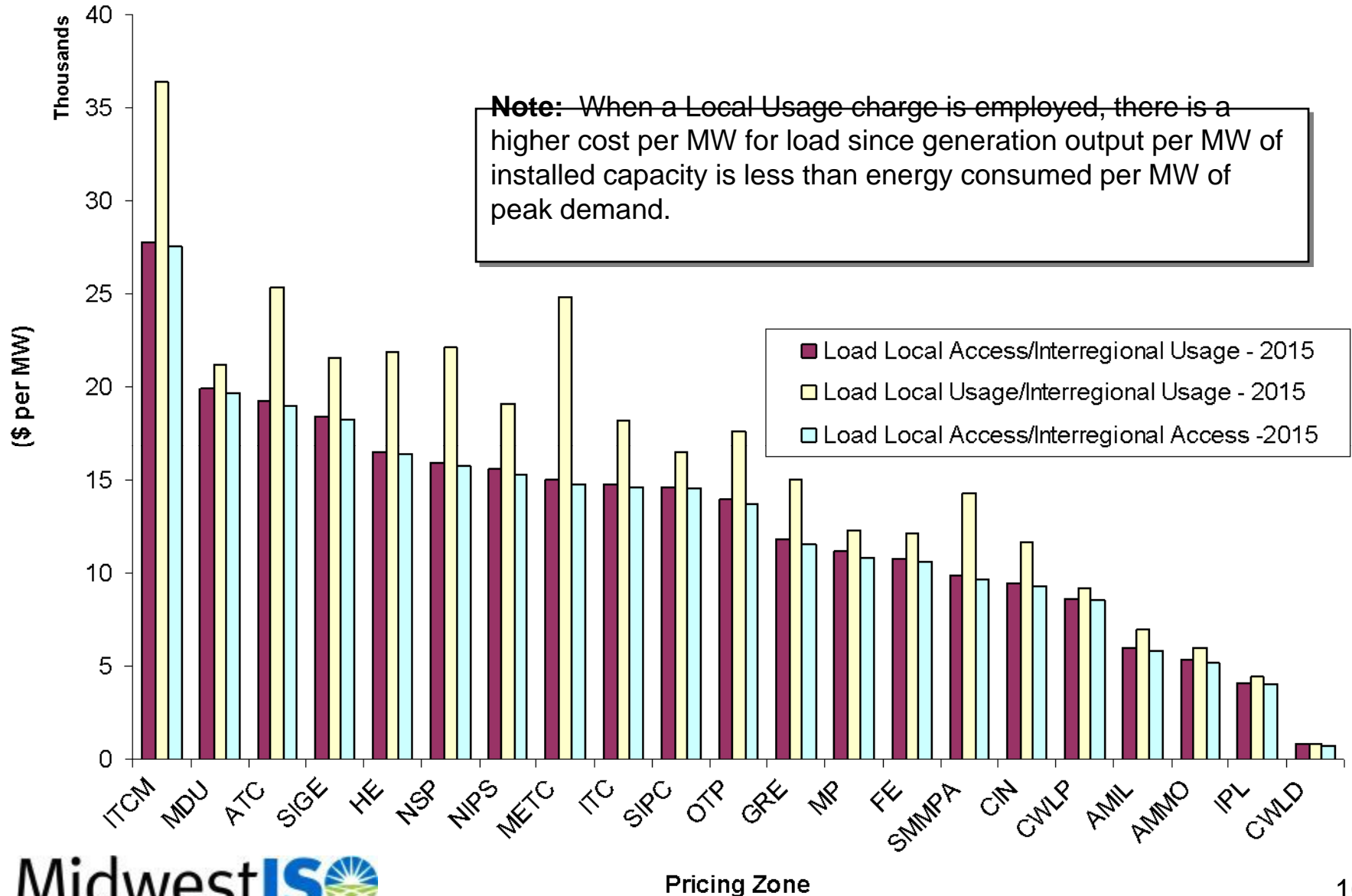
# 2015 Case Pricing Zone Net Impact under Local Access and Interregional Usage— (Illustrates Variation in Load/Generation Balance among Pricing Zones)



# 2025 Case based on Local Access and Interregional Usage Charge Type – Total Generation and Load Allocations by Pricing Zone

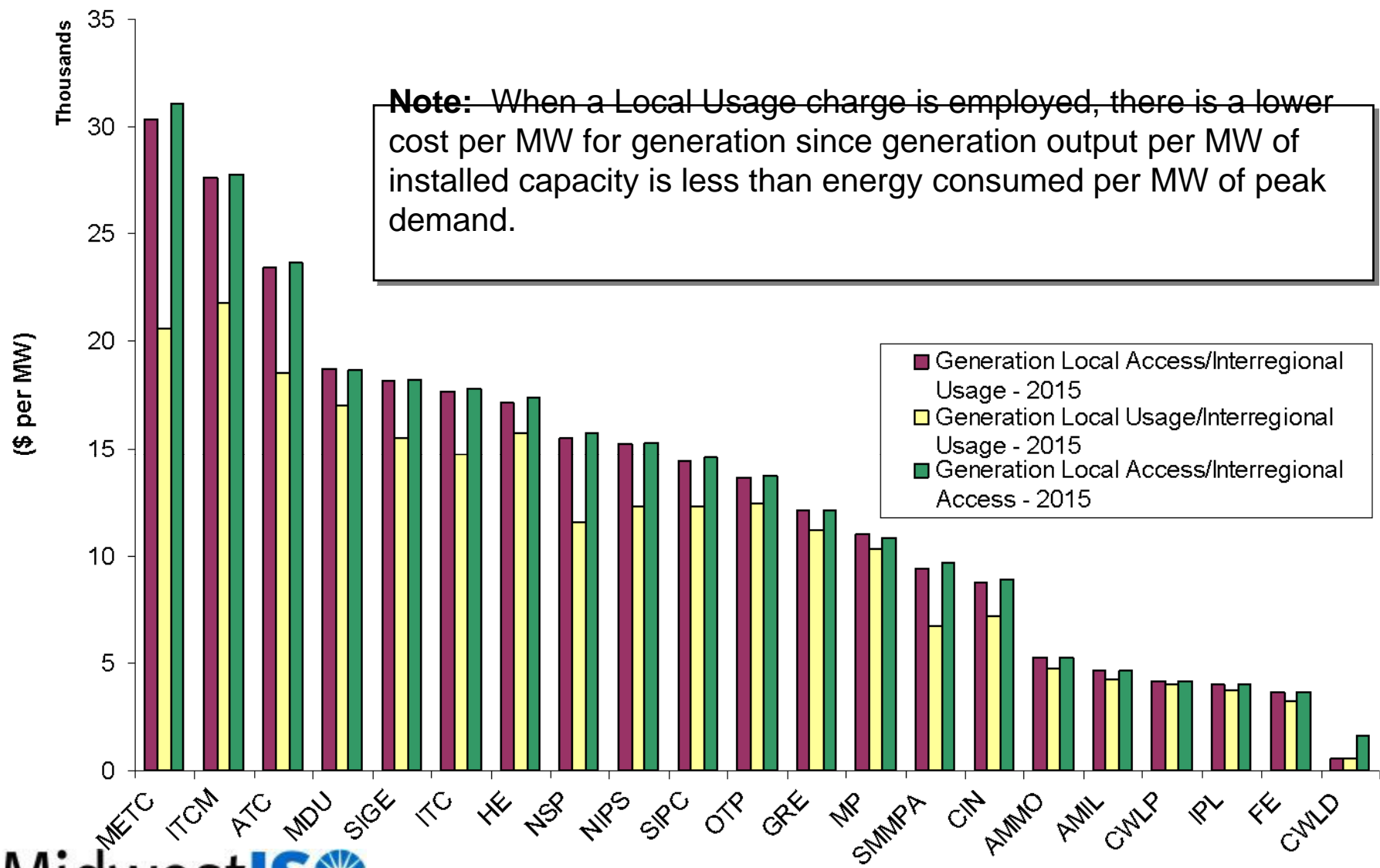


# 2015 Case Load Costs per MWh by Charge Type

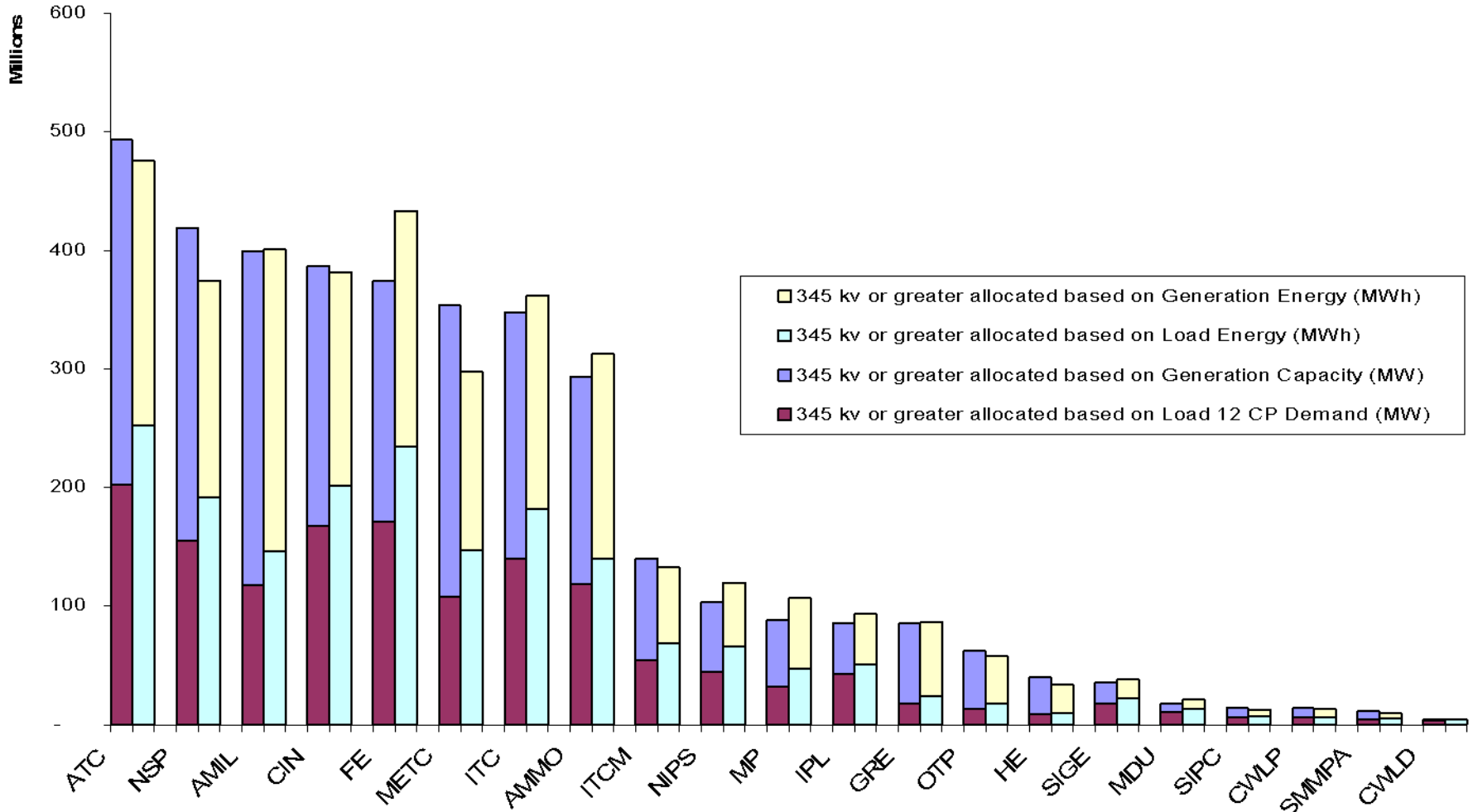


# 2015 Case Generation Costs per MWh by Charge Type

**Note:** When a Local Usage charge is employed, there is a lower cost per MW for generation since generation output per MW of installed capacity is less than energy consumed per MW of peak demand.

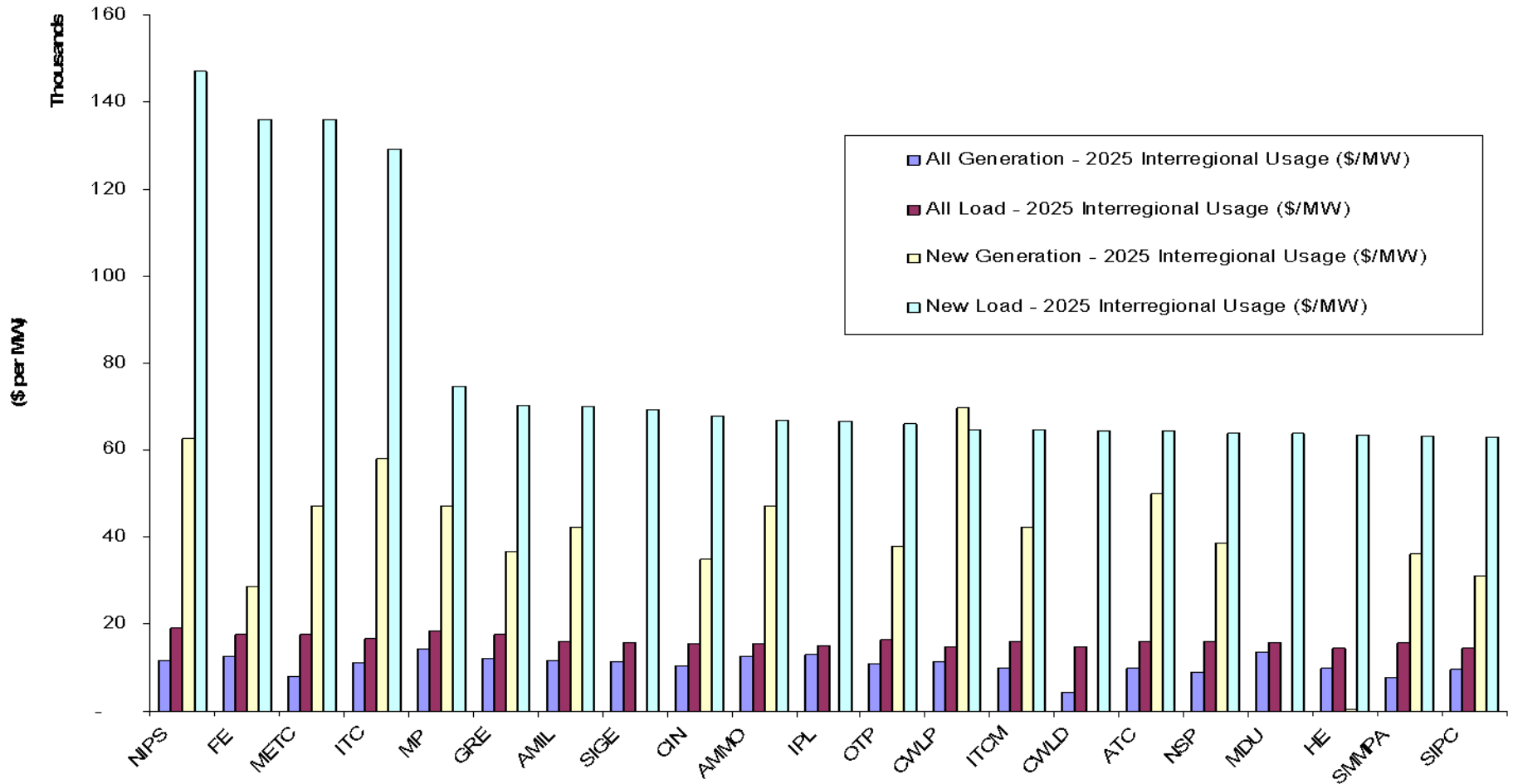


# Comparison of Pricing Zone Allocations based on Energy vs. Capacity for new 345 kV and above Transmission in 2025



# 2025 Case Incremental Transmission 345 kV or Greater

## (Interregional Usage Charge Type)



# Next Steps

## Detailed Analysis - September

Analyze additional criteria for layer definitions

- Percent of revenue requirements

- Percent of revenue requirements by voltage level

Analyze impact of reallocating pre-RTO costs

Analyze cost impacts by asset owner

Analyze future interchange scenarios

Analyze impacts of Regional Generation Outlet Study

# Appendix

# Supplementary Materials

# Data for Preliminary Analysis

**Revenue Requirements:** Attachment O and Schedule 26 estimates through MTEP 2008

**12 CP Load:** 2008 data grown at 1.27% per year (PROMOD assumption)

**Load MWh:** 2008 data grown at 1.5% per year (PROMOD assumption)

**Installed generation:** 2008 existing + PROMOD for additions (excluding retirements)

**Generation MWh:** 2008 for existing + PROMOD for additions (excluding retirements)

External Transactions are only based on net amount of imports and exports

# 2015 Case – Local Access/Interregional Usage Pricing Zone Summary

**Comparison of Total Charges to Pricing Zones under Current Tariff to Injection/Withdrawal Method**  
2015 Case Local Access and Interregional Usage (in \$ Millions)

Pricing Zones	Current Tarriff	Local Access and Interregional Usage			Difference between Current Tariff and I/W		
	Load	Load	Generation	Total	Load	Generation	Total
AMIL	118	45	84	128	(74)	84	10
AMMO	85	40	53	93	(46)	53	8
ATC	584	233	351	584	(350)	351	1
FE	255	122	147	269	(133)	147	14
CIN	220	100	132	231	(121)	132	11
CWLD	0	0	0	0	0	0	0
CWLP	8	3	5	8	(4)	5	1
GRE	58	13	47	59	(46)	47	1
HE	44	10	36	46	(35)	36	1
IPL	20	11	12	24	(9)	12	3
ITC	343	136	192	328	(207)	192	(15)
ITCM	223	91	135	226	(132)	135	3
MDU	24	13	10	23	(10)	10	(0)
MI Sub	49	16	33	49	(33)	33	(0)
METC	277	92	189	281	(185)	189	4
MP	62	22	36	58	(40)	36	(4)
NIPS	97	46	55	100	(51)	55	4
NSP	411	148	227	375	(263)	227	(36)
OTP	59	12	34	46	(48)	34	(13)
SIPC	11	6	5	11	(5)	5	0
SMMPA	7	3	4	7	(4)	4	0
SIGE	44	21	24	45	(23)	24	0
<b>Total</b>	<b>3,000</b>	<b>1,182</b>	<b>1,811</b>	<b>2,993</b>	<b>(1,817)</b>	<b>1,811</b>	<b>(7)</b>

Note: Total difference does not equal zero due to interregional costs allocated to external transactions

# 2015 Case – Local Usage/Interregional Usage

## Total Cost by Pricing Zone

### Comparison of Total Charges to Pricing Zones under Current Tariff to Injection/Withdrawal Method

2015 Case - Local Usage and Interregional Usage (\$ in Millions)

Pricing Zones	Current Tarriff	Local Usage and Interregional Usage			Difference between Current Tariff and I/W		
	Load	Load	Generation	Total	Load	Generation	Total
AMIL	118	52	76	128	(67)	76	10
AMMO	85	45	48	93	(41)	48	8
ATC	584	307	277	584	(277)	277	1
FE	255	137	132	269	(118)	132	14
CIN	220	123	108	231	(97)	108	11
CWLD	0	0	0	0	0	0	0
CWLP	8	3	5	8	(4)	5	1
GRE	58	16	43	59	(42)	43	1
HE	44	13	33	46	(31)	33	1
IPL	20	12	12	24	(8)	12	3
ITC	343	168	161	328	(176)	161	(15)
ITCM	223	120	107	226	(103)	107	3
MDU	24	14	9	23	(9)	9	(0)
MI Sub	49	27	22	49	(22)	22	(0)
METC	277	153	128	281	(124)	128	4
MP	62	24	34	58	(38)	34	(4)
NIPS	97	56	44	100	(40)	44	4
NSP	411	206	169	375	(205)	169	(36)
OTP	59	15	31	46	(45)	31	(13)
SIPC	11	7	4	11	(4)	4	0
SMMPA	7	4	3	7	(3)	3	0
SIGE	44	25	20	45	(20)	20	0
<b>Total</b>	<b>3,000</b>	<b>1,525</b>	<b>1,468</b>	<b>2,993</b>	<b>(1,474)</b>	<b>1,468</b>	<b>(7)</b>

Note: Total difference does not equal zero due to interregional costs allocated to external transactions

# 2015 Case – Local Access/Interregional Access Summary Data

## Comparison of Total Charges to Pricing Zones under Current Tariff to Injection/Withdrawal Method

2015 Case - Local Access and Interregional Access (\$ in Millions)

Pricing Zones	Current Tarriff	Local Access and Interregional Access			Difference between Current Tariff and I/W		
	Load	Load	Generation	Total	Load	Generation	Total
AMIL	118	43	84	127	(75)	84	9
AMMO	85	39	54	92	(47)	54	7
ATC	584	231	354	585	(353)	354	1
FE	255	119	147	266	(135)	147	12
CIN	220	98	134	232	(122)	134	12
CWLD	0	0	0	0	0	0	0
CWLP	8	3	5	8	(4)	5	1
GRE	58	12	47	59	(46)	47	1
HE	44	10	36	46	(35)	36	2
IPL	20	11	12	23	(9)	12	3
ITC	343	135	194	329	(209)	194	(15)
ITCM	223	90	136	226	(132)	136	4
MDU	24	13	10	23	(11)	10	(1)
MI Sub	49	16	33	49	(33)	33	(0)
METC	277	91	194	285	(186)	194	8
MP	62	21	36	57	(41)	36	(5)
NIPS	97	45	55	100	(52)	55	3
NSP	411	147	230	377	(264)	230	(34)
OTP	59	11	35	46	(48)	35	(13)
SIPC	11	6	5	11	(5)	5	0
SMMPA	7	3	4	7	(4)	4	0
SIGE	44	21	24	45	(24)	24	0
<b>Total</b>	<b>3,000</b>	<b>1,164</b>	<b>1,829</b>	<b>2,993</b>	<b>(1,835)</b>	<b>1,829</b>	<b>(7)</b>

Note: Total difference does not equal zero due to interregional costs allocated to external transactions

# 2025 – Local Access/Interregional Usage

## Total Costs to Load and Generation by Pricing Zone

### Total Charges to Loads and Generation Within Each Pricing Zone

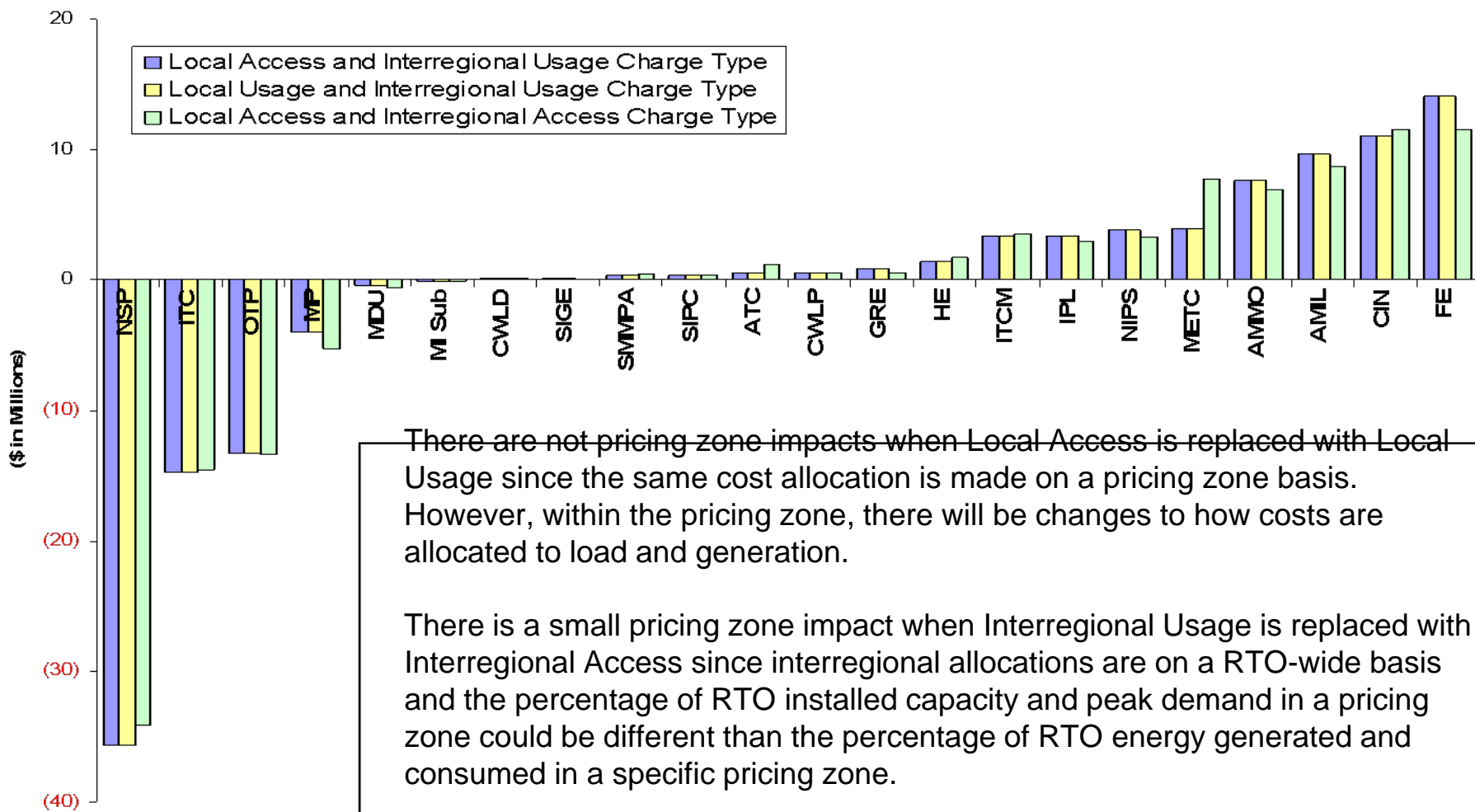
2025 Case Local Access and Interregional Usage (in \$ Millions)

Pricing Zones	Local Access and Interregional Usage		
	Load	Generation	Total
AMIL	174	324	<b>498</b>
AMMO	167	214	<b>381</b>
ATC	474	548	<b>1,022</b>
FE	340	326	<b>666</b>
CIN	287	295	<b>582</b>
CWLD	4	0	<b>4</b>
CWLP	10	11	<b>21</b>
GRE	35	104	<b>139</b>
HE	20	56	<b>76</b>
IPL	58	51	<b>109</b>
ITC	301	361	<b>661</b>
ITCM	152	197	<b>349</b>
MDU	27	16	<b>43</b>
MI Sub	15	34	<b>49</b>
METC	224	332	<b>556</b>
MP	65	91	<b>156</b>
NIPS	105	106	<b>211</b>
NSP	318	402	<b>721</b>
OTP	27	73	<b>99</b>
SIPC	12	11	<b>23</b>
SMMPA	8	8	<b>16</b>
SIGE	43	37	<b>80</b>
<b>Total</b>	<b>2,866</b>	<b>3,595</b>	<b>6,461</b>

Note: Interregional Usage Charges for External Transactions represent \$287 million

# 2015 Case Pricing Zone Net Impact under all Three Charge Types

(Illustrates Variation in Load/Generation Balance among Pricing Zones)



# 2025 Case 343 KV and Above Incremental Transmission allocated using 100% Postage Stamp

