



2007-09

2008-10


Long Term Access Goal Update

Prior to ATC Board of Directors Meeting

February 26, 2009

SME Discussion





2007-09 and 2008-10 Long Term Goals

Access (10%)

- Reduce congestion in ATC footprint as measured by Expected Net Ratepayer Benefits*
 - In connection with each annual 10-year plan, identify new projects that reduce congestion costs
 - Prioritize projects and implement or seek regulatory approval, as appropriate
 - Annually calculate the net rate payer benefit for projects placed in service during the year
 - Annually review the market and LMP levels with the Board of Directors to place ATC's performance in market context
 - Aggregate performance over the three-year cycle for assessment by the Board of Directors

**Measured on an ex-ante basis*

- We are using actual 2007 and 2008 loads to evaluate Expected Net Ratepayer Benefit

Long Term Access Goal 2008 Progress

(i) Identify New Projects	7 Projects Identified				
	4 Under Analysis				
	3 Moving Forward				
(ii) Prioritize, Authorize and Construct	Paddock to Rockdale 345kV				
	Concord Capacitor Bank (deferred)				
(iii) Calculate Net Ratepayer Benefit for Completed Projects	Annual Savings	Present Value of Annual Savings	Present Value of Project Costs	% of Cost Offset by Savings	
	11 Projects Completed in 2008	\$14 Million	\$246 Million	\$614 Million	40%
(iv) LMP and Market Constraints Performance	2005	2006	2007	2008	
	LMP Summary (ATC Compared to Neighboring Hubs)	\$10.56 (20.0%)	\$3.22 (7.2%)	\$3.89 (7.7%)	\$2.64 (5.2%)
	Top Ten Congested ATC Elements (2007)	4 of the Top Ten 2007 Constraints addressed in 2008			
	Top Ten Congested ATC Elements (2008)	8 of the Top Ten 2008 Constraints will be addressed by budgeted projects			
	ATC System Energy Flows	Actual Western Interface Flows		- Maximum Import Level Increased 29%	
				- Maximum Export Level Increased 73%	



Summary

- ATC is making progress on Long Term Access Goal
 - Large projects underway
 - Smaller high value projects being identified
- ATC is helping to drive
 - Congestion costs **down**
 - Operational flexibility **up**
 - Transfer capability **up**
 - Especially the Western Interface



Project Process Pipeline For Economics of Transmission Projects



Identify &
Analyze

Approval or
Under Construction

In – Service (2008)
(Evaluate Results
& Benefits)

Market
Impacts

Bain – Zion 345kV
North La Crosse – Cardinal 345kV
Lore – Cardinal 345kV
Pt Beach – Sheboygan 345kV
Monroe County-Council Creek
UP Energy Collaborative
Ten Year Assessment Projects
• Sunset Point Transformers
• Castle Rock – McKenna 69kV

Concord Cap Bank (Deferred)
Paddock-Rockdale
Gardner Park-Hwy 22
Morgan-Werner West
Rockdale-West Middleton

X-19 Portage-Trienda 138kV uprate
N.Appleton-White Clay 138kV uprate
Empire-Forsyth 138kV uprate
Saukville-St Lawrence 138kV rebuild
N Appleton-Mason 138kV uprate
N Appleton-Lost Dauphin 138kV uprate
Dodge Cty. Transmission system upgrades
Arrowhead-Gardner Park 345kV
Add 138/69kV transformer at Menominee
N. Appleton-Fox River 345kV uprate
Kelly-Whitcomb 115kV rebuild

Expected Net
Ratepayer Benefit
LMP Differentials
Constraint Value
Metric
Top Ten
Constrained
Elements

Key

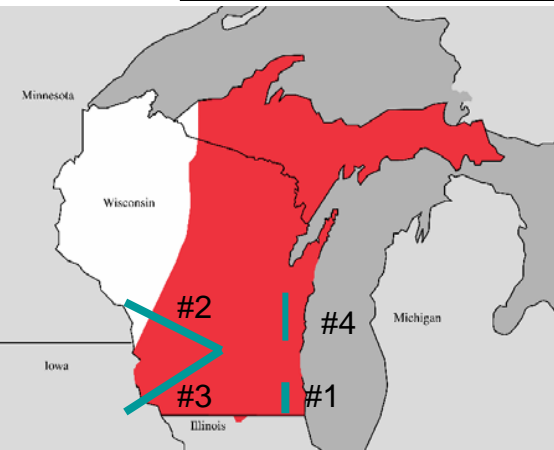
Red – Economic Transmission Projects
Purple - Reliability and Economic
Blue – Reliability Transmission Projects

Analyze New Projects

Preliminary Results

Projects	Present Value of Cost	Present Value of Savings	
			(Millions of \$)
#1	Bain - Zion 345kV	~\$22	~(\$800) to \$150 Costs ATC Ratepayers in 5 of 6 Futures
#2	North La Crosse - Cardinal 345kV	~\$600	~\$100 to \$1,200 Pays for itself in 4 of 6 Futures
#3	Lore - Cardinal 345kV	~\$400	~(\$600) to \$850 Pays for itself in only 1 of 6 Futures

#4	Point Beach – Sheboygan Falls	Initial analysis underway
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Identify New Projects

Reviewed all currently proposed Reliability Projects that have the potential to be accelerated

Reliability Project System Additions	Reliability Need Year	Preliminary Project Cost Estimate (2008\$) Millions	Levelized Annual Carrying Cost (2008\$) Millions	Single Year 70/30 Cost Savings for 2018 (2008\$) Millions
Sunset Point Substation Transformers	2018	\$3.8	\$0.5	\$0.8
Uprate Castle Rock-Mckenna 69-kV line uprate	2018	\$0.4	\$0.1	\$1.4

Monroe County – Council Creek proposed based on Reliability and Economics

Multi Need Project System Additions		Present Value of Cost (2007\$) Millions	Present Value of Savings (2007\$) Millions	Net Present Value (2007\$) Millions
Monroe County - Council Creek 161kV Line		\$27.4	\$72.8 to \$145.5	\$45.5 to \$117.7



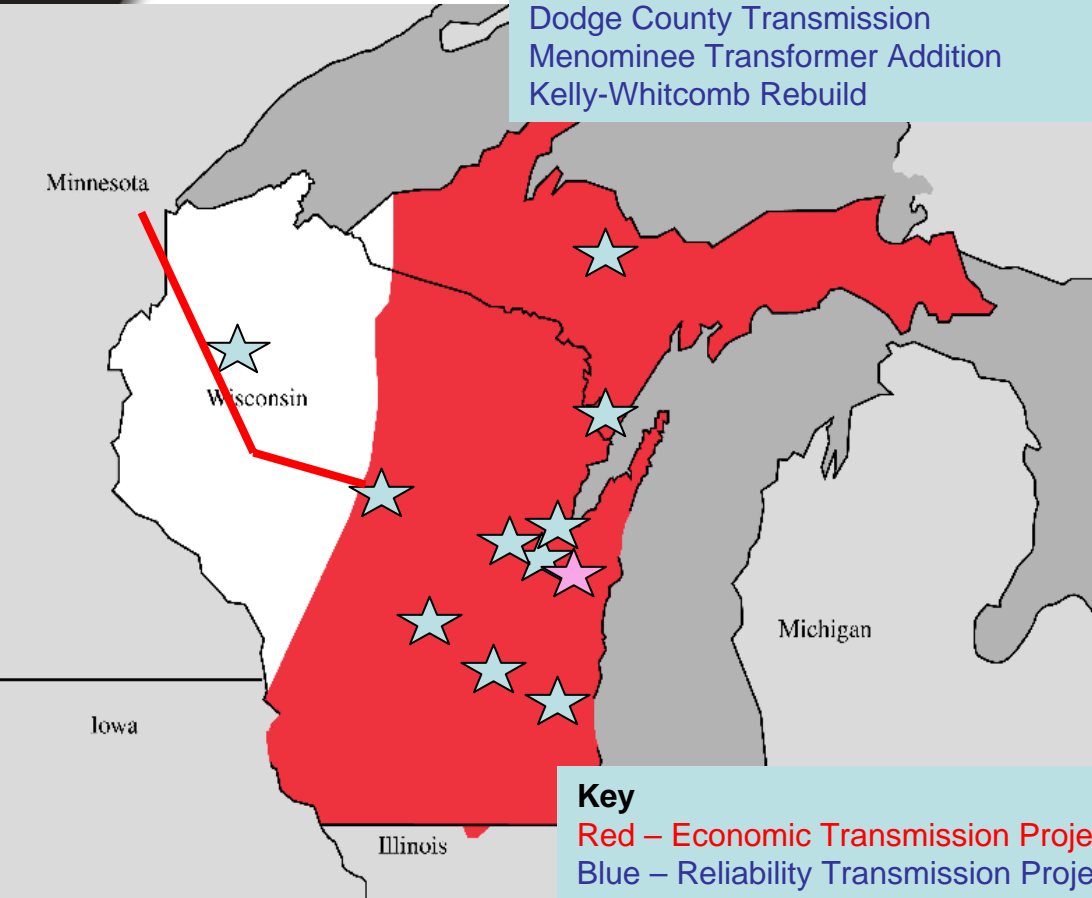
Approvals and Under Construction

- Paddock-Rockdale 345 kV
 - Under construction
 - Expected in-service date 2010
- Concord Capacitor Bank
 - \$3.4 Million project deferred
 - Re-dispatch option has 2:1 cost advantage over adding transmission assets

Net Ratepayer Benefit of In-Service Projects

2008 Projects Value \$14.4 Million

Arrowhead-Gardner Park
N.Appleton-White Clay
N.Appleton-Mason
N.Appleton-Lost Dauphin
N.Appleton-Fox River
Empire-Forsyth
Saukville-St.Lawrence
Portage-Trienda
Dodge County Transmission
Menominee Transformer Addition
Kelly-Whitcomb Rebuild



- Projects were required for Reliability or justified by Economic Benefits
- Projects provided \$14.4 Million in 2008 due to reduced energy costs and losses
- Forecasting ongoing savings at the 2008 level, approximately 40% of project costs are offset
- Project costs = ~\$614 Million



Net Ratepayer Benefit of In-Service Projects

	Annual Savings at Actual Loads (Millions)	% Offset of Project Costs (Actual Loads)	Annual Savings at Forecasted Loads (Millions)
2007 Projects	\$4.2	80%	\$12.3
2008 Projects	\$14.4	40%	\$16.2
Total	\$18.6*	-----	\$28.5

* \$18.6 Million toward \$35 Million Goal

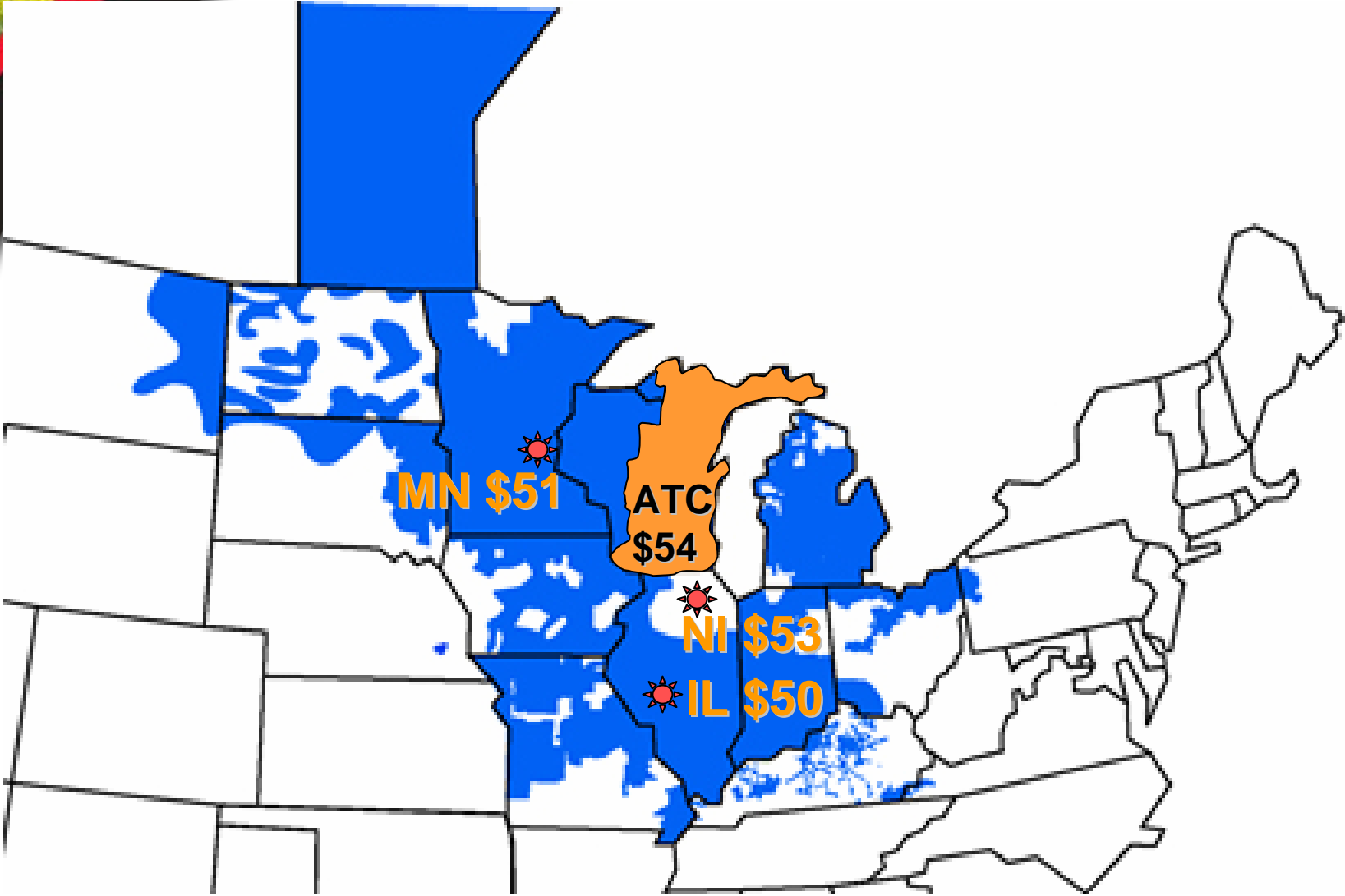


2008 Market Review

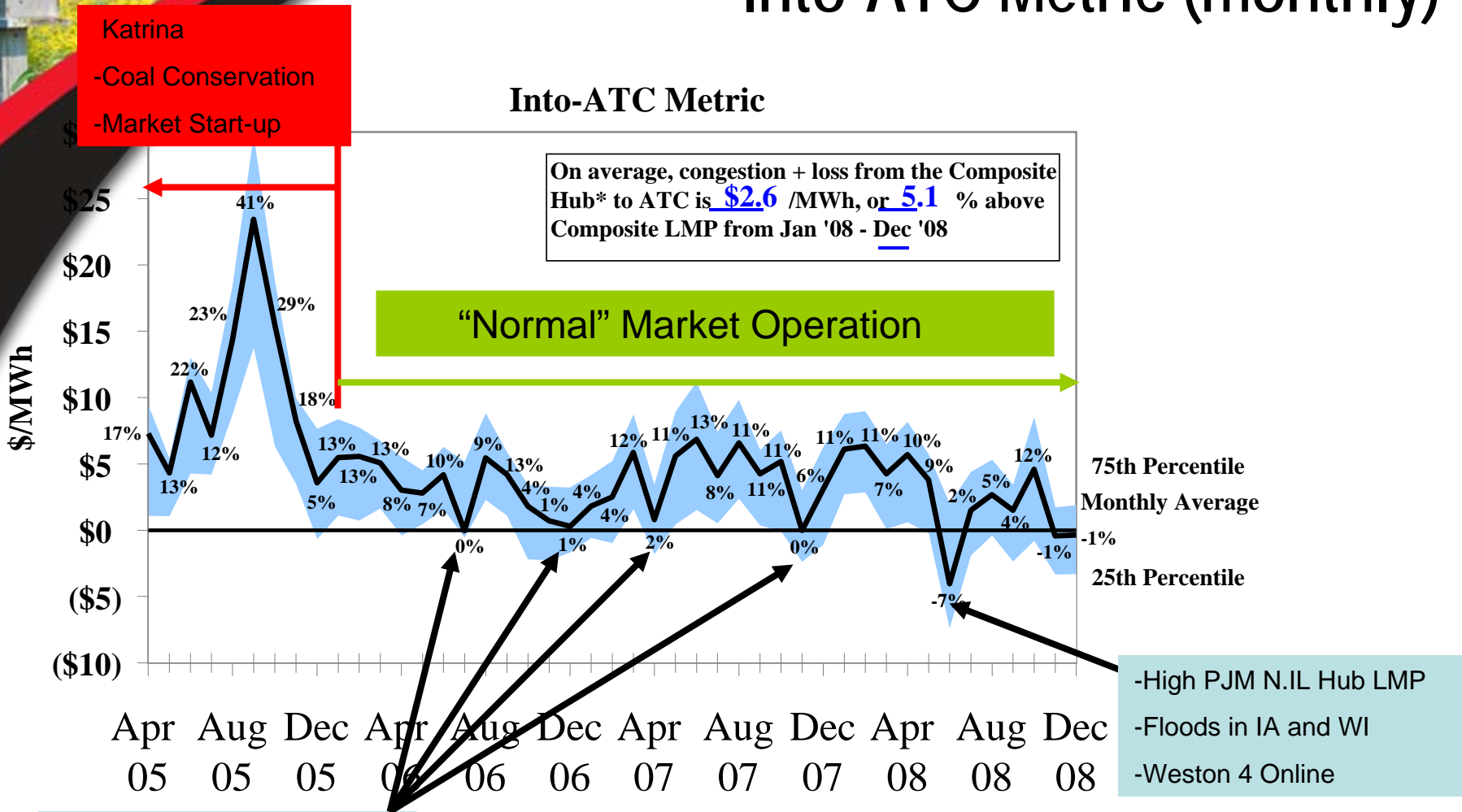
- Portfolio of metrics
 - LMP Differentials into ATC
 - Annual
 - Monthly
 - Constraints
 - Top ten constrained elements
 - ATC imports and exports

LMP Differentials Into ATC

Annual - 2008



Into-ATC Metric (monthly)



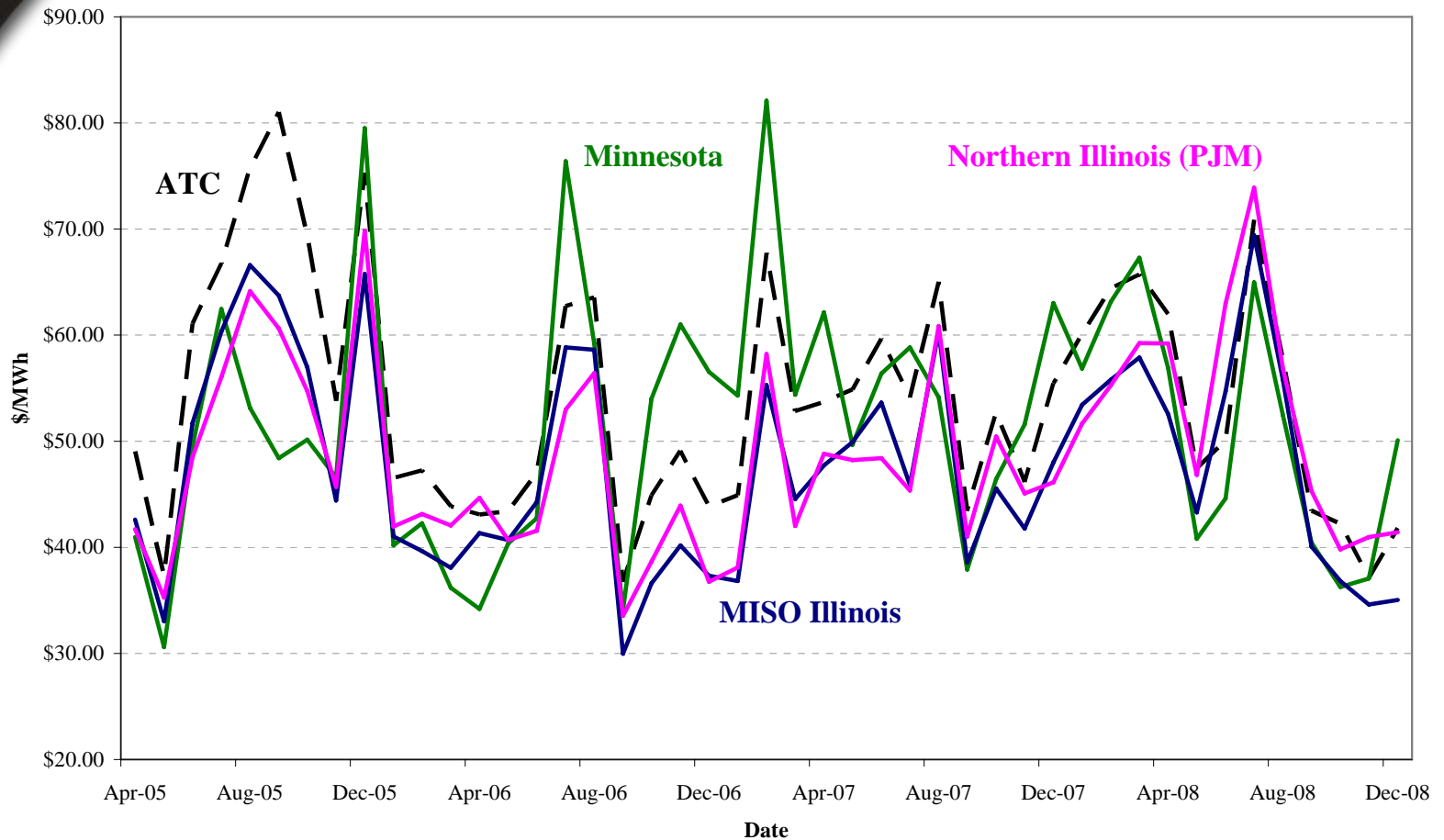
Driven by high LMP at the MN Hub

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Monthly Weighted Average LMP Comparison

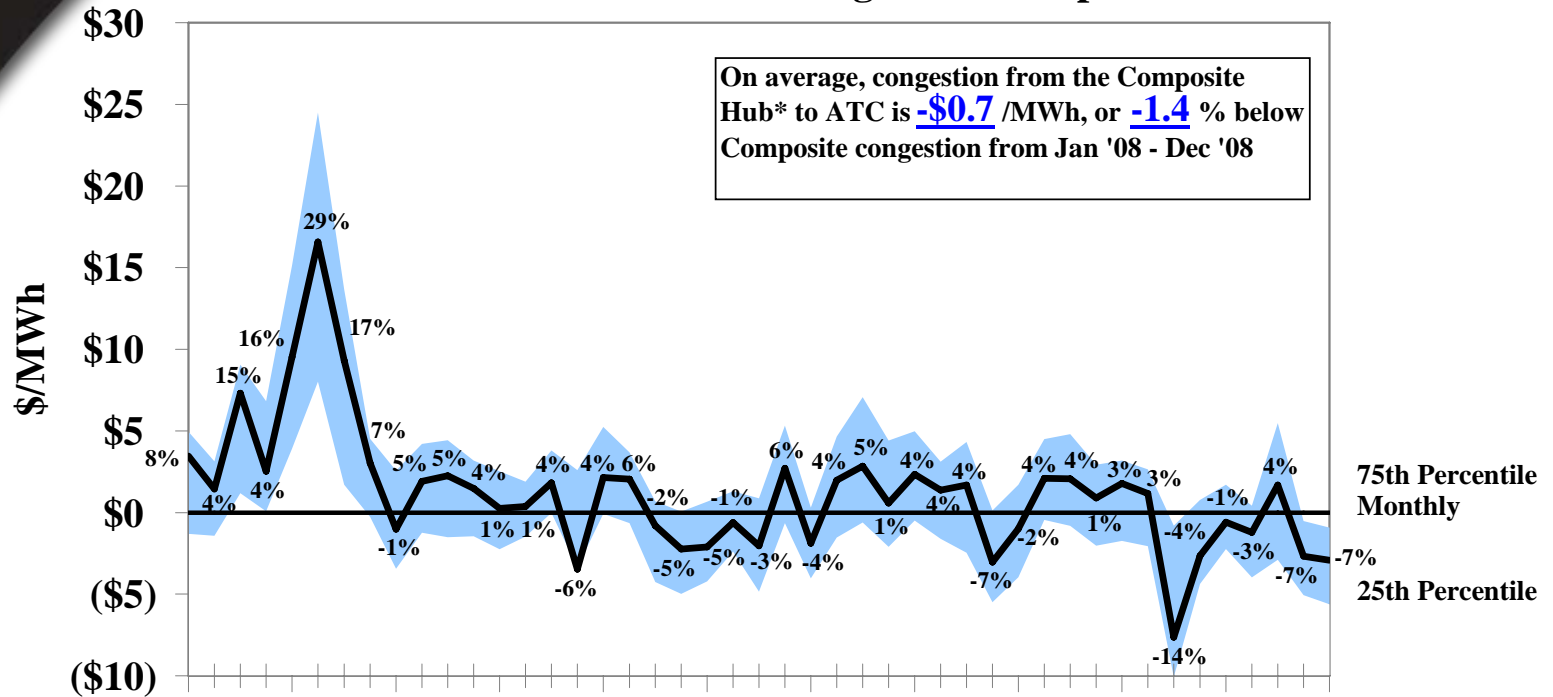
Comparison of Load Weighted Average Day-Ahead LMPs between ATC, Northern Illinois (PJM), MISO Illinois, and Minnesota



Congestion into ATC

Into-ATC Metric: the Congestion Component

Day-Ahead



Apr Aug Dec Apr Aug Dec Apr Aug Dec Apr Aug Dec
 05 05 05 06 06 06 07 07 07 08 08 08

* Composite Hub defined as the average of N. Illinois (PJM), Illinois (MISO), and Minnesota Hubs.

Implied N. Illinois (PJM) loss differential equal to Illinois (MISO), and implied N. Illinois (PJM) congestion differential is assumed to be equal to the N. Illinois (PJM) LMP less Illinois (MISO) loss differential less Marginal Energy Cost (MISO).

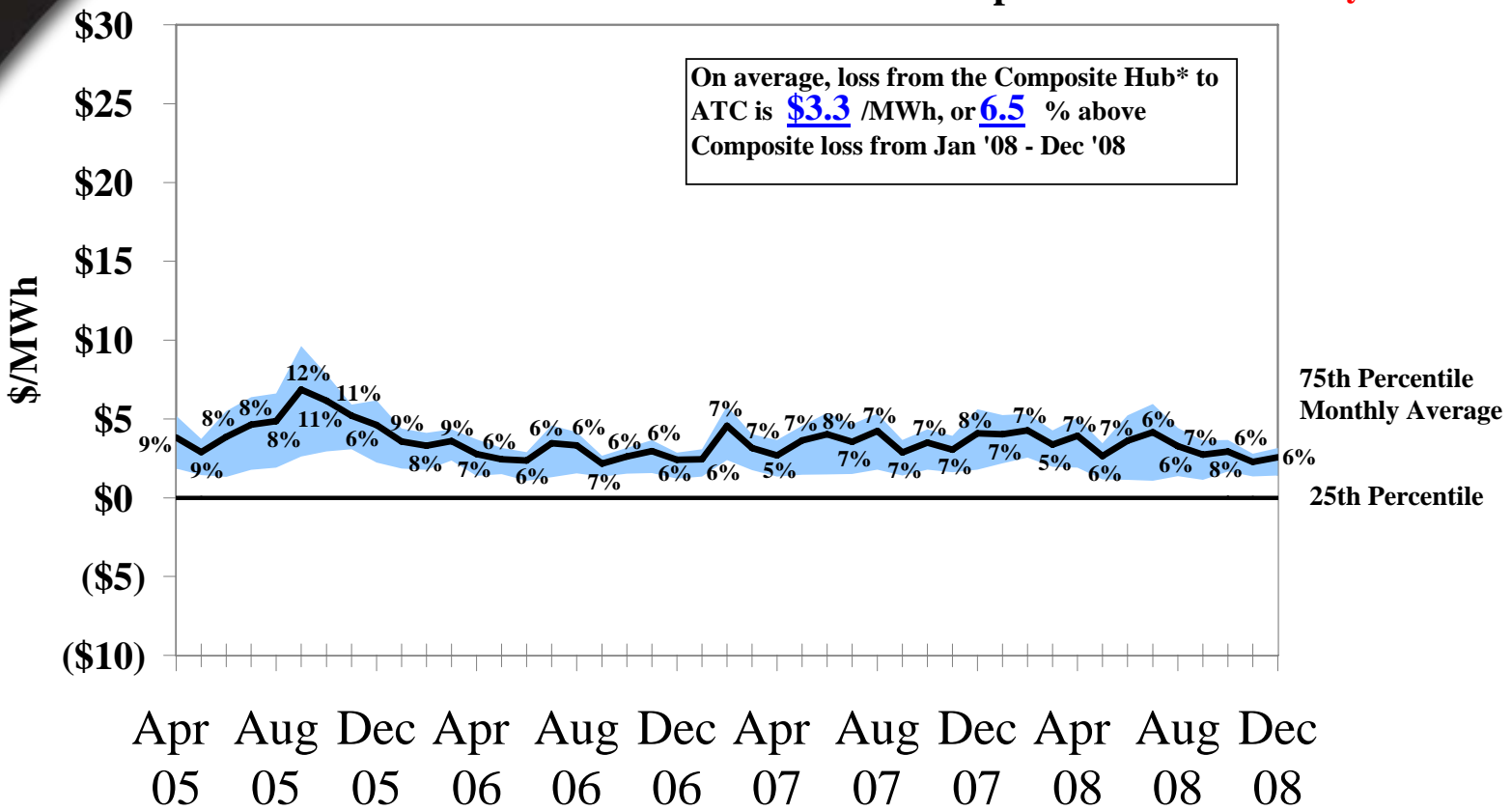
%'s show ATC congestion component divided by the Composite Hub LMP.

Sources : Day-ahead prices from Global Energy Decisions's Velocity Suite ; Prices weighted by ATC hourly load.

Losses into ATC

Into-ATC Metric: the Losses Component

Day-Ahead



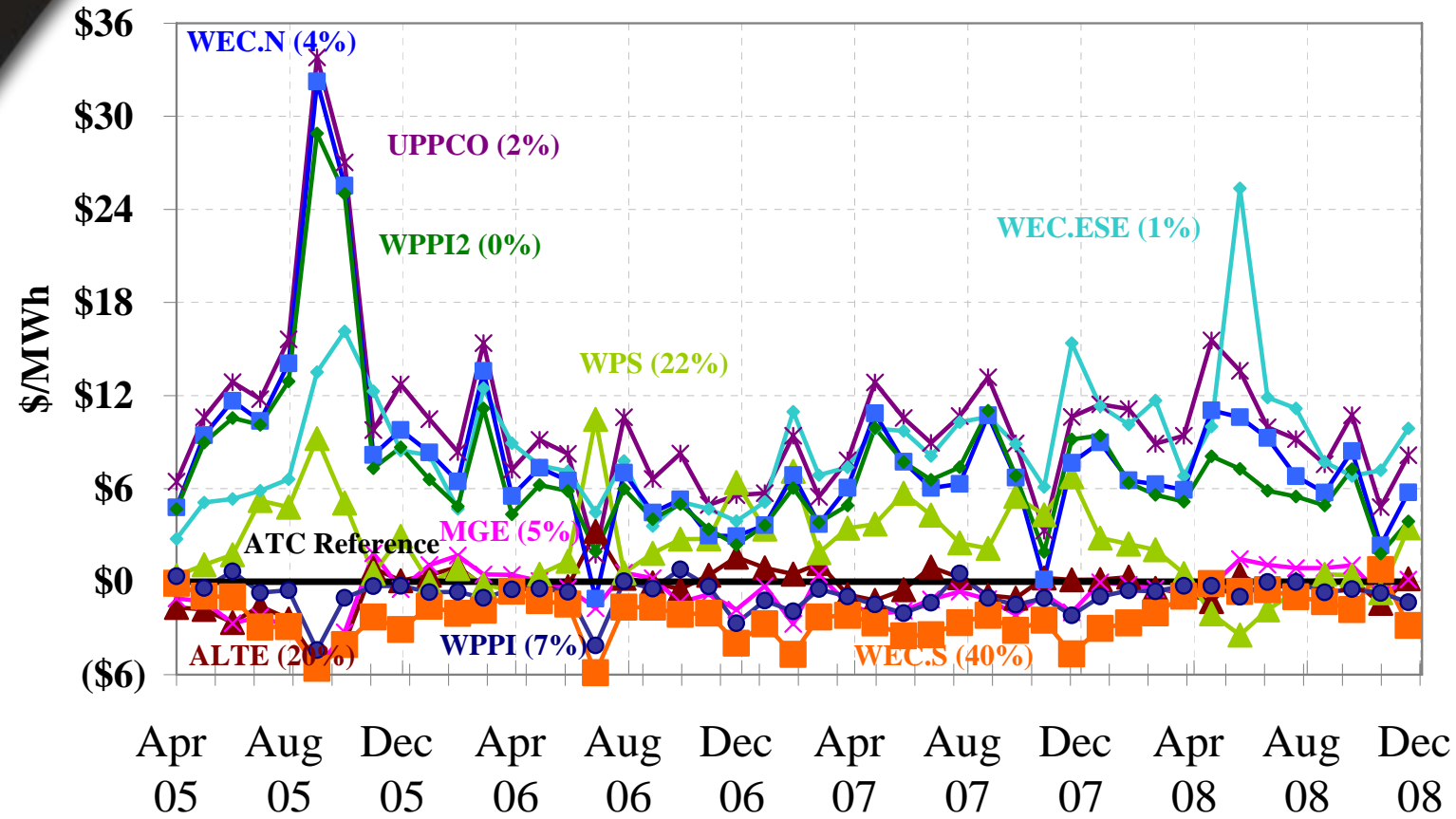
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 %'s show ATC loss component divided by the Composite Hub LMP.
 Sources : Day-ahead prices from Global Energy Decisions's Velocity Suite ; Prices weighted by ATC hourly load.



Zonal LMP Differentials to ATC Reference

LMP Differentials Among Zones Within ATC (Load MWh shares in parentheses)

Day-Ahead





Constraint Hours 2005, 2006, 2007 and 2008

	Day Ahead Market	Real Time Market
	Constraint Hours	Constraint Hours
2005*	10,911	4,261
2006	10,473	2,897
2007	11,241	2,697
2008	18,295	5,774
AVG	12,730	3,907

* 9 Months of Market Operation

2008 ATC Top Ten Constrained Elements

Hours	Congestion Cost Value Index	Constraint (DA Market)	Potential Solution
18,295	177	Total for all ATC Day Ahead constraints 1-1-2008 thru 12-31-2008	Solutions listed in ATC TYA unless otherwise noted
1,847	40	Paddock 345/138 kV Transformer T21 flo Wempletown - Rockdale 345 kV	Paddock - Rockdale 345 kV (Planned 2010)
395	19	Pleasant Prairie - Zion 345 kV flo Cherry Valley - Silver Lake 345 kV (ComEd)	Constrained element is in ComEd system
469	16	Point Beach - Sheboygan Falls 345 kV flo Edgewater - Sauville 345 kV	ATC is analyzing line data to determine potential solutions (Summer 2008)*
221	8	Minnesota to Wisconsin Exports Interface (MWEX)	Monroe County-Council Creek 161 kV (Proposed 2012)
901	8	Whitcomb - Caroline 115 kV flo Werner West - Rocky Run 345 kV	Gardner Park - Highway 22 - Morgan 345 kV (Planned 2009)
205	6	Ellington - Hintz 138 kV flo North Appleton - Werner West 345 kV	Increased line clearance (Completed August 2007) Morgan - Highway 22 - Gardner Park (Planned 2009)
166	5	Granville 345/138 kV Transformer T1 flo Sauville 345/138 kV Transformer T1	
78	4	Bluemound 230/138 kV Transformer T3 flo Bluemound 230/138 kV Transformer T1	Outage of Bluemound xfmr 2 contributed to this constraint.
204	4	Hintz - Werner 138 kV flo North Appleton - Werner West 345 kV	Terminal equipment replacement (Completed August 2007) Morgan - Highway 22 - Gardner Park (Planned 2009)
351	3	Dewey (CW8) - Weston 115 kV flo Eau Claire - Arpin 345 kV + Op. Guide	Gardner Park - Highway 22 - Morgan 345 kV (Planned 2009)

Total of Top Ten constraints hours = 4837 (26%)

Total of Top Ten constraints Value Index = \$115,161,785 (65%)

Total Number of constraints = 133



2007 ATC Top Ten Congested Elements

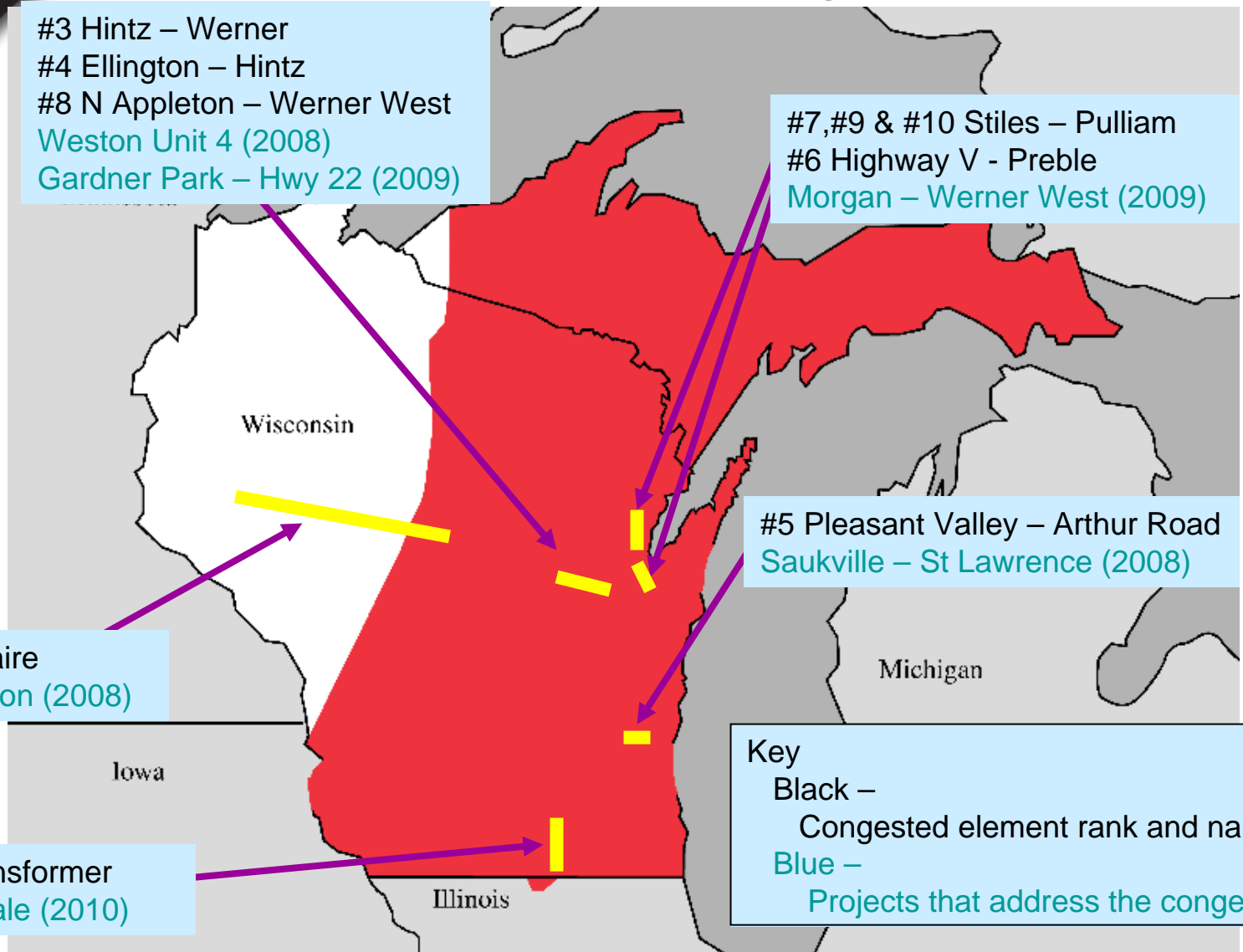
#3 Hintz – Werner
#4 Ellington – Hintz
#8 N Appleton – Werner West
Weston Unit 4 (2008)
Gardner Park – Hwy 22 (2009)

#7, #9 & #10 Stiles – Pulliam
#6 Highway V - Preble
Morgan – Werner West (2009)

#5 Pleasant Valley – Arthur Road
Saukville – St Lawrence (2008)

#2 Arpin – Eau Claire
Arrowhead – Weston (2008)

#1 Paddock Transformer
Paddock-Rockdale (2010)



Key
Black –
Congested element rank and name
Blue –
Projects that address the congestion

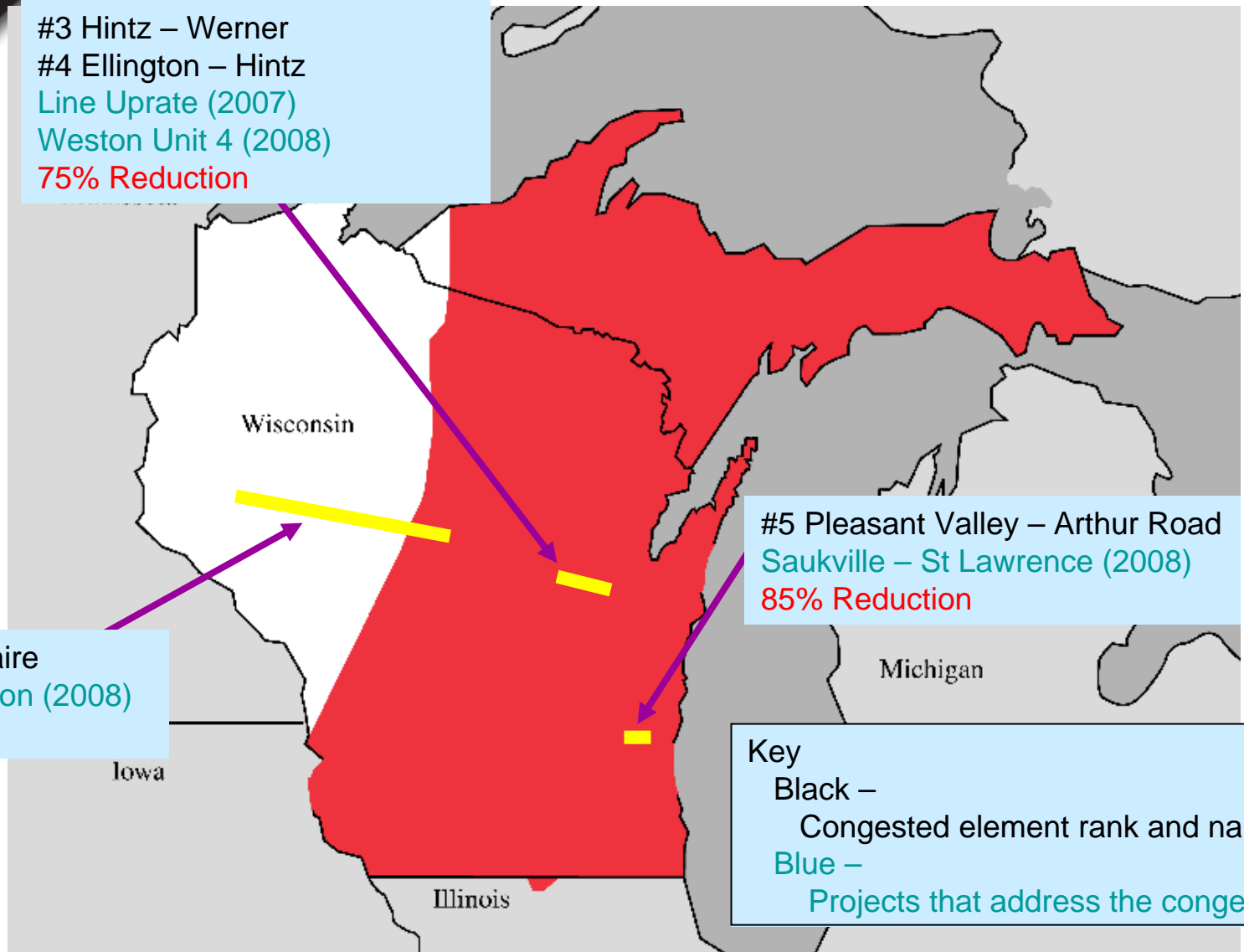
Congested Elements Success Stories in 2008



#3 Hintz – Werner
#4 Ellington – Hintz
Line Uprate (2007)
Weston Unit 4 (2008)
75% Reduction

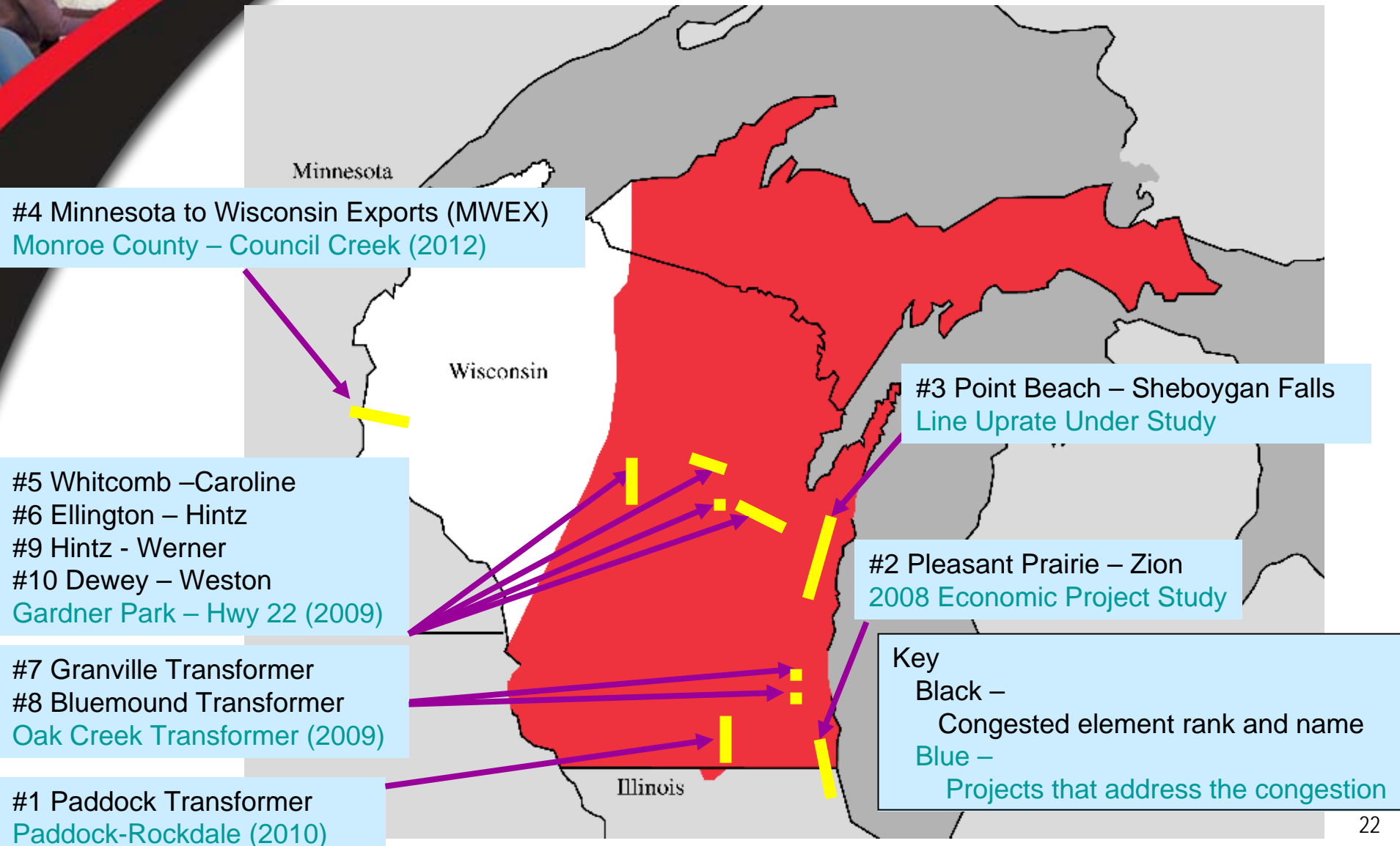
#5 Pleasant Valley – Arthur Road
Saukville – St Lawrence (2008)
85% Reduction

#2 Arpin – Eau Claire
Arrowhead – Weston (2008)
76% Reduction



Key
Black –
Congested element rank and name
Blue –
Projects that address the congestion

2008 ATC Top Ten Congested Elements





ATC Imports and Exports

January – December 2008

- Energy flows stay in ATC
- ATC was a net importer of energy 97% of the hours
- Flows increase to and from the West
 - Western Flow Gates
 - 1406 MW Import - 29% import increase
 - 804 MW Export - 73% export increase
- Flexibility across multiple futures is the key

ATC 2008 Import Export Summary

ATC Interface Information													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
ATC Net Import/Export													
Average Hourly Import	1,353	1,220	1,224	1,360	1,406	934	720	726	699	1,168	998	685	1,406
Average Hourly Export	0	216	138	0	131	96	334	210	22	21	70	246	334
% Import Hours	100%	99.1%	99.1%	100.0%	99.1%	97.5%	89.9%	91.7%	96.9%	99.7%	98.9%	92.9%	97.1%
% Export Hours	0%	0.9%	0.9%	0.0%	0.9%	2.5%	10.1%	8.3%	3.1%	0.3%	1.1%	7.1%	2.9%
Max Hourly Import (MW)	2,413	2,538	2,579	2,764	2,541	2,675	1,821	1,975	1,025	2,262	2,090	1,733	2,764
Max Hourly Export (MW)	0	402	304	0	201	252	1,048	1,042	200	39	141	655	1048
Northeast (MI) Interface													
% Import Hours	96.4%	91.7%	82.9%	85.4%	69.1%	61.7%	62.7%	78.4%	61.2%	71.2%	81.3%	90.5%	77.7%
% Export Hours	3.6%	8.3%	17.1%	14.6%	30.9%	38.3%	37.3%	21.6%	38.8%	28.8%	18.7%	9.5%	22.3%
Max Hourly Import (MW)	114	122	111	111	77	90	84	79	60	76	74	102	122
Max Hourly Export (MW)	26	19	31	34	46	50	56	60	55	40	43	24	60
Southern (IL) Interface													
% Import Hours	97.3%	98.3%	97.3%	96.7%	93.9%	72.5%	68.5%	65.4%	79.8%	89.1%	86.7%	79.3%	85.4%
% Export Hours	2.7%	1.7%	2.7%	3.3%	6.1%	27.5%	31.5%	34.6%	20.2%	10.9%	13.3%	20.7%	14.6%
Max Hourly Import (MW)	2,061	2,065	2,337	1,744	1,844	1,514	1,183	1,132	1,396	1,522	1,584	1,535	2,337
Max Hourly Export (MW)	550	390	331	827	436	993	805	911	786	532	576	844	993
Western (MN) Interface													
% Import Hours	95.6%	85.9%	68.8%	99.2%	98.2%	92.2%	89.9%	88.9%	99.6%	97.0%	96.5%	71.8%	90.3%
% Export Hours	4.4%	14.1%	31.2%	0.8%	1.8%	7.8%	10.1%	11.1%	0.4%	3.0%	3.5%	28.2%	9.7%
Max Hourly Import (MW)	1,055	993	987	1,075	1,336	1,383	1,268	1,307	1,381	1,406	1,084	815	1,406
Max Hourly Export (MW)	154	447	551	158	228	612	804	540	101	340	216	661	804



Conclusions and Discussion

- Reliability projects have contributed significant economic benefit
- External LMP prices continue to be lower than LMPs within ATC
 - Difference is smaller
- ATC's current project portfolio is responsive to current constraints
 - Four of the top ten 2007 constrained elements ameliorated
 - Eight of the top ten congested elements in ATC will be substantially addressed by 2012
- Customers benefit from the removal of constraints whether importing or exporting