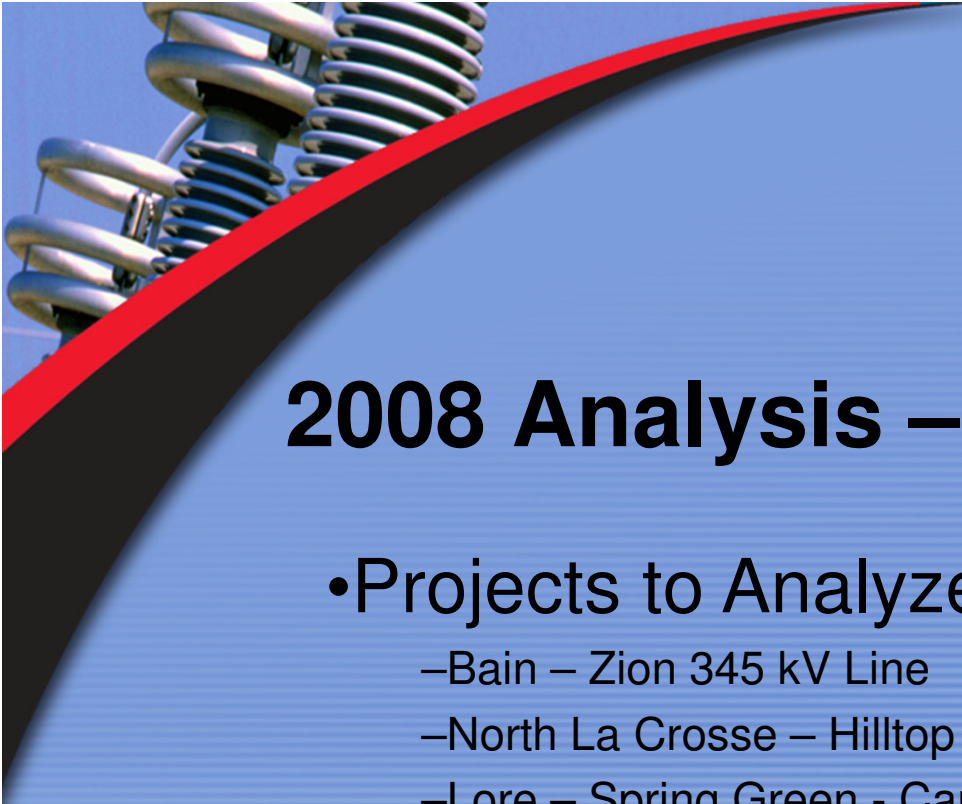




ATC Order 890 Stakeholder Update Preliminary Results

ATC Economic Planning
12-18-08





2008 Analysis – Preliminary Results

- Projects to Analyze

- Bain – Zion 345 kV Line
- North La Crosse – Hilltop – Spring Green – Cardinal 345 kV Line
- Lore – Spring Green - Cardinal 345 kV Line

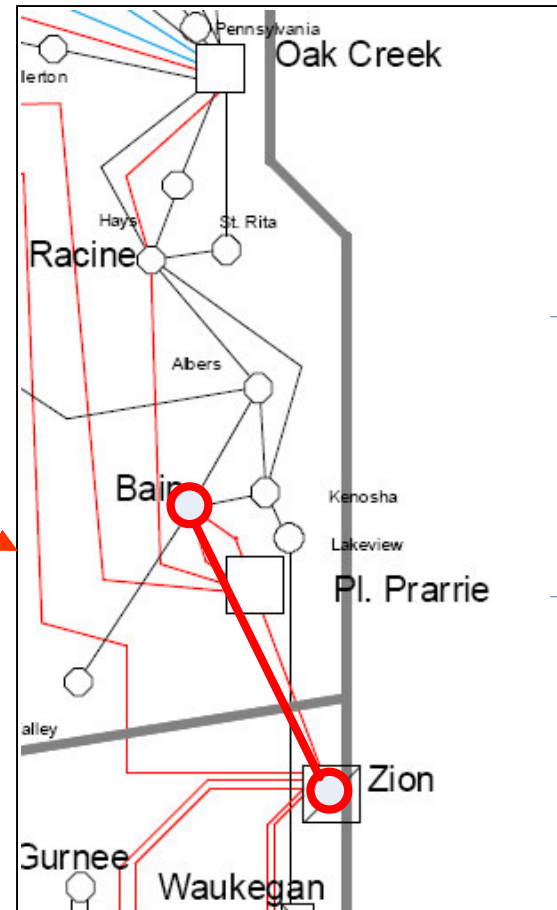
- Preliminary 2018 Non-Project Results

- Preliminary 2024 Non-Project Results

- Preliminary 2024 Project Results

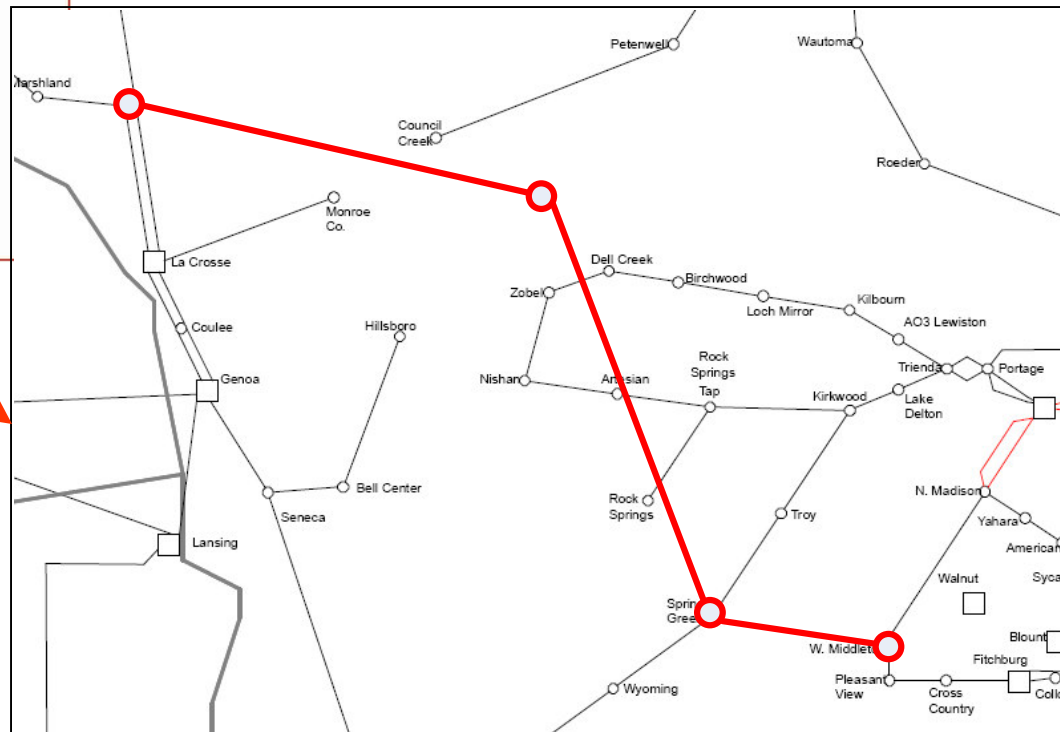


Projects to Analyze Bain – Zion 345 kV



These drawings are intended for informational purposes only and do not depict
3 actual transmission line additions or potential routes and siting

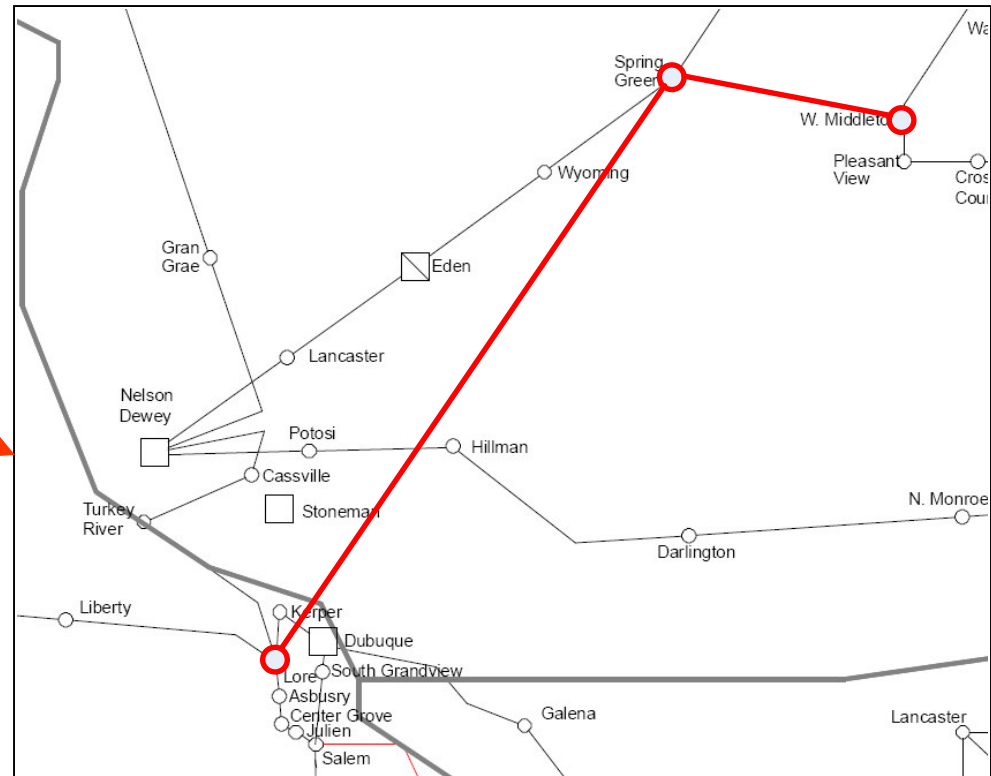
Projects to Analyze North La Crosse – Hilltop – Spring Green – Cardinal 345 kV



These drawings are intended for informational purposes only and do not depict
4 actual transmission line additions or potential routes and siting



Projects to Analyze Lore – Spring Green – Cardinal 345 kV



These drawings are intended for informational purposes only and do not depict
5 actual transmission line additions or potential routes and siting





Preliminary 2018 Non-Project Results

2018 ATC Futures							
PROMOD Run Data	Reference	Robust Economy	High Retirements	High Environmental	Slow Growth	20% Wind*	Fuel & Investment Limitation
ATC LLMP (\$/MWh)	\$60.37	\$43.67	\$53.31	\$83.67	\$31.90	\$61.60	\$71.03
MISO LLMP (\$/MWh)	\$63.65	\$38.79	\$57.31	\$93.00	\$35.39	\$61.88	\$79.41
ATC Demand (MWh)	83,820,299	95,869,360	81,582,360	77,421,414	73,164,417	86,114,450	79,832,312
Net Imports (MWh)	11,416,038	24,357,443	18,382,394	14,365,593	958,242	18,941,086	6,647,571
% Net Imports of Demand	13.62%	25.41%	22.53%	18.56%	1.31%	22.00%	8.33%
Peak Imports (MW)	3,903	5,122	4,512	4,319	2,826	6,216	3,095
Demand Response (MWh)	1,142	11,798	586	386	162	1,988	446
Emergency (MWh)	1	4,059	18	87	0	392	99
Interruptibles & DLC (MWh)	294	735	20	9	25	26	36

*Utilizes the MISO Wind Transmission Overlay



Preliminary 2024 Non-Project Results

PROMOD Run Data	2024 ATC Futures						
	Reference**	Robust Economy**	High Retirements**	High Environmental**	Slow Growth**	20% Wind*	Fuel & Investment Limitation**
ATC LLMP (\$/MWh)	\$74.93	\$85.23	\$59.64	\$92.16	\$40.33	\$74.84	\$78.98
MISO LLMP (\$/MWh)	\$72.42	\$49.50	\$60.05	\$98.46	\$42.95	\$62.71	\$77.65
ATC Demand (MWh)	93,016,521	114,473,420	89,206,382	81,212,426	75,387,274	96,979,468	86,264,429
Net Imports (MWh)	8,381,305	30,162,822	12,838,014	4,909,497	-1,549,632	25,220,985	4,614,795
% Net Imports of Demand	9.01%	26.35%	14.39%	6.05%	-2.06%	26.01%	5.35%
Peak Imports (MW)	4,222	6,066	4,294	3,165	2,611	5,834	4,220
Demand Response (MWh)	5,872	97,597	3,005	2,181	221	11,992	2,666
Emergency (MWh)	540	30,165	283	198	0	16,623	181
Interruptibles & DLC (MWh)	312	11,483	2	1	0	253	124

*Utilizes the MISO Wind Transmission Overlay

**Utilizes the MISO Reference Transmission Overlay

Preliminary 2024 Reference Future Project Results

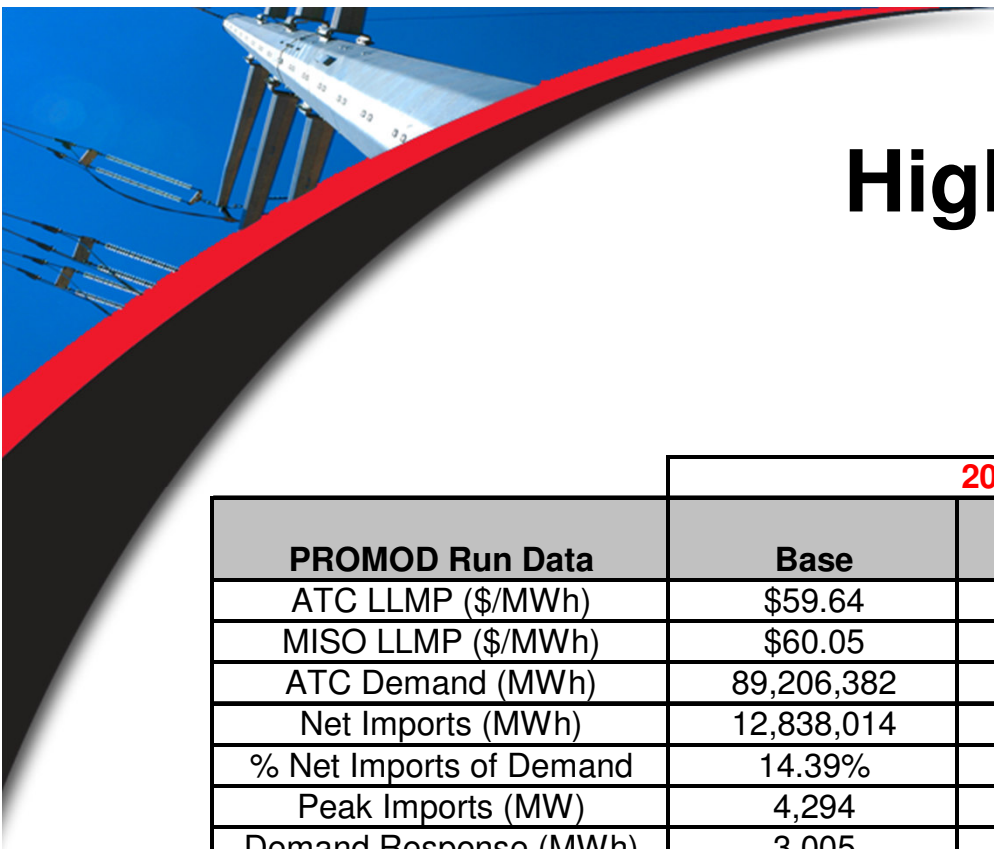
PROMOD Run Data	2024 ATC Reference Future**			
	Base	Bain - Zion	Lore - Cardinal	North La Crosse - Cardinal
ATC LLMP (\$/MWh)	\$74.93	\$76.10	\$74.55	\$75.87
MISO LLMP (\$/MWh)	\$72.42	\$72.57	\$72.33	\$72.52
ATC Demand (MWh)	93,016,521	93,016,521	93,016,521	93,016,521
Net Imports (MWh)	8,381,305	7,635,094	8,624,763	8,156,256
% Net Imports of Demand	9.01%	8.21%	9.27%	8.77%
Peak Imports (MW)	4,222	4,213	4,345	4,001
Demand Response (MWh)	5,872	5,402	8,223	15,471
Emergency (MWh)	540	731	451	1,486
Interruptibles & DLC (MWh)	312	310	1,061	8

**Utilizes the MISO Reference Transmission Overlay

Preliminary 2024 Robust Economy Future Project Results

PROMOD Run Data	2024 ATC Robust Economy Future**			
	Base	Bain - Zion	Lore - Cardinal	North La Crosse - Cardinal
ATC LLMP (\$/MWh)	\$85.23	\$84.71	\$85.74	\$85.84
MISO LLMP (\$/MWh)	\$49.50	\$49.44	\$49.47	\$49.59
ATC Demand (MWh)	114,473,420	114,473,420	114,473,420	114,473,420
Net Imports (MWh)	30,162,822	30,335,782	30,651,114	29,558,469
% Net Imports of Demand	26.35%	26.50%	26.78%	25.82%
Peak Imports (MW)	6,066	6,451	6,328	6,272
Demand Response (MWh)	97,597	95,847	133,978	142,163
Emergency (MWh)	30,165	30,211	35,547	46,133
Interruptibles & DLC (MWh)	11,483	12,053	12,576	7,018

**Utilizes the MISO Reference Transmission Overlay



Preliminary 2024 High Retirements Future Project Results

	2024 ATC High Retirements Future**			
PROMOD Run Data	Base	Bain - Zion	Lore - Cardinal	North La Crosse - Cardinal
ATC LLMP (\$/MWh)	\$59.64	\$60.75	\$59.53	\$60.11
MISO LLMP (\$/MWh)	\$60.05	\$60.17	\$60.06	\$60.18
ATC Demand (MWh)	89,206,382	89,206,382	89,206,382	89,206,382
Net Imports (MWh)	12,838,014	12,126,520	12,973,644	14,064,643
% Net Imports of Demand	14.39%	13.59%	14.54%	15.77%
Peak Imports (MW)	4,294	4,294	4,330	4,436
Demand Response (MWh)	3,005	2,996	3,990	15,061
Emergency (MWh)	283	282	216	2,188
Interruptibles & DLC (MWh)	2	3	19	7

**Utilizes the MISO Reference Transmission Overlay



Preliminary 2024 High Environmental Future Project Results

2024 ATC High Environmental Future**				
PROMOD Run Data	Base	Bain - Zion	Lore - Cardinal	North La Crosse - Cardinal
ATC LLMP (\$/MWh)	\$92.16	\$96.61	\$92.32	\$90.65
MISO LLMP (\$/MWh)	\$98.46	\$98.80	\$98.53	\$98.42
ATC Demand (MWh)	81,212,426	81,212,426	81,212,426	81,212,426
Net Imports (MWh)	4,909,497	2,929,425	4,907,113	6,565,057
% Net Imports of Demand	6.05%	3.61%	6.04%	8.08%
Peak Imports (MW)	3,165	3,165	3,137	3,685
Demand Response (MWh)	2,181	2,394	2,995	9,365
Emergency (MWh)	198	254	206	871
Interruptibles & DLC (MWh)	1	0	3	3

**Utilizes the MISO Reference Transmission Overlay

Preliminary 2024 Slow Growth Future Project Results

PROMOD Run Data	2024 ATC Slow Growth Future**			
	Base	Bain - Zion	Lore - Cardinal	North La Crosse - Cardinal
ATC LLMP (\$/MWh)	\$40.33	\$43.18	\$40.15	\$40.48
MISO LLMP (\$/MWh)	\$42.95	\$43.17	\$42.92	\$42.97
ATC Demand (MWh)	75,387,274	75,387,274	75,387,274	75,387,274
Net Imports (MWh)	-1,549,632	-4,893,443	-1,241,752	-1,295,918
% Net Imports of Demand	-2.06%	-6.49%	-1.65%	-1.72%
Peak Imports (MW)	2,611	2,611	2,555	2,555
Demand Response (MWh)	221	281	240	1,099
Emergency (MWh)	0	0	0	26
Interruptibles & DLC (MWh)	0	0	1	0

**Utilizes the MISO Reference Transmission Overlay

Preliminary 2024 20% Wind Future Project Results

2024 ATC 20% Wind Future*				
PROMOD Run Data	Base	Bain - Zion	Lore - Cardinal	North La Crosse - Cardinal
ATC LLMP (\$/MWh)	\$74.84	\$75.05	\$71.71	\$75.20
MISO LLMP (\$/MWh)	\$62.71	\$62.78	\$62.22	\$62.90
ATC Demand (MWh)	96,979,468	96,979,468	96,979,468	96,979,468
Net Imports (MWh)	25,220,985	24,391,056	27,051,383	25,552,622
% Net Imports of Demand	26.01%	25.15%	27.89%	26.35%
Peak Imports (MW)	5,834	6,109	6,138	6,047
Demand Response (MWh)	11,992	10,975	17,226	31,520
Emergency (MWh)	16,623	17,108	16,877	21,090
Interruptibles & DLC (MWh)	253	307	679	198

*Utilizes the MISO Wind Transmission Overlay

Preliminary 2024 Fuel & Investment Limitation Future Project Results

	2024 ATC Fuel & Investment Limitation Future**			
PROMOD Run Data	Base	Bain - Zion	Lore - Cardinal	North La Crosse - Cardinal
ATC LLMP (\$/MWh)	\$78.98	\$79.74	\$78.59	\$79.59
MISO LLMP (\$/MWh)	\$77.65	\$77.71	\$77.61	\$77.71
ATC Demand (MWh)	86,264,429	86,264,429	86,264,429	86,264,429
Net Imports (MWh)	4,614,795	4,042,980	4,988,987	4,635,992
% Net Imports of Demand	5.35%	4.69%	5.78%	5.37%
Peak Imports (MW)	4,220	4,220	4,220	4,220
Demand Response (MWh)	2,666	1,884	3,807	8,202
Emergency (MWh)	181	179	194	603
Interruptibles & DLC (MWh)	124	132	398	2

**Utilizes the MISO Reference Transmission Overlay



Questions?

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