## Pleasant Prairie – Zion Energy Center Transmission Line Project

# Preliminary Economic Analysis Results

Todd Tadych ATC Economic Planning

2011

Preliminary

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## Introduction

- Project Description
- Summary
- Preliminary ATC Benefits
- Assumptions
  - 2020 Futures
  - 2026 Futures
- PROMOD energy benefits description
- Loss savings description
- Next Steps
  - Analysis
  - Project Status
  - Project Milestones
  - Preliminary Results



2

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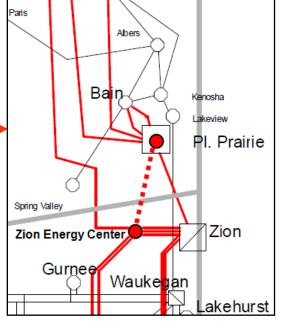
#### Pleasant Prairie-Zion Energy Center (P4-ZEC) 345 kV Project Description

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- ~6 mile long 345 kV line from Southeast Wisconsin to Northeast Illinois
- ~\$20M \$25M estimated cost\*
- Congestion relief project
- Currently designated as an MVP

\* Estimate is shown in \$2010 and is based on preliminary engineering design and routing



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3



- Pleasant Prairie Zion Energy Center 345 kV line provides benefit to ATC customers with or without MISO MVP cost sharing
- Pleasant Prairie-Zion Energy Center is being considered as part of MISO's first Candidate MVP Portfolio
  - If ultimately accepted as part of portfolio, ATC customers will pay approximately 10-15% of total cost of the project



### P4-ZEC 345 kV Net Benefits Monetized Thus Far With 85% Cost Sharing

ATC Customer Benefit Metric Savings	Robust	Green	Slow	Regional	Limited	Carbon
(\$M - 2010)	Economy	Economy	Growth	Wind	Investment	Constrained
50-Year PV Savings Including:						
-6.7% Nominal Discount Rate						
-2015, 2020, and 2026	\$154.70					
PROMOD Analysis		ቀርብ ርሻ	¢40.07	\$23.13	\$74.76	(\$46.68)
-Energy Loss Valuation		\$62.67	\$10.27			
-PVRR of Project Costs (15%):						
\$3.05 (\$M - 2010)						
-In-Service Date: March 2014						
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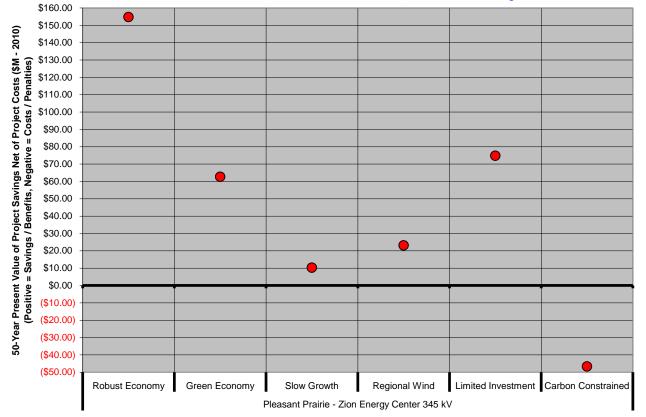


5

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#### P4-ZEC 345 kV Net Benefits Monetized Thus Far With 85% Cost Sharing

Combined 2015, 2020 & 2026 Pleasant Prairie - Zion Energy Center Project Savings Nominal Discount Rate = 6.7%; In-Service Date: March 2014; 15% MVP Cost Sharing



Pleasant
Prairie-Zion
Energy Center
provides net
benefits to ATC
customers in 5 of
6 futures.
Benefits do not
yet include
Insurance
Benefit.



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### P4-ZEC 345 kV Net Benefits Monetized Thus Far No Cost Sharing

ATC Customer Benefit Metric Savings	Robust	Green	Slow	Regional	Limited	Carbon
(\$M - 2010)	Economy	Economy	Growth	Wind	Investment	Constrained
50-Year PV Savings Including: -6.7% Nominal Discount Rate -2015, 2020, and 2026 PROMOD Analysis -Energy Loss Valuation -PVRR of Project Costs: \$20.35 (\$M - 2010)	\$137.40	\$45.37	(\$7.02)	\$5.83	\$57.46	(\$63.98)
-In-Service Date: March 2014						



7

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## P4-ZEC 345 kV Net Benefits Monetized Thus Far No Cost Sharing

\$150.00 \$140.00 Project Costs (\$M - 2010) \$130.00 \$120.00 Costs / Penalties) \$110.00 \$100.00 \$90.00 \$80.00 \$70.00 5 Benefits, Negative Savings Net \$60.00 \$50.00 \$40.00 \$30.00 Project \$20.00 Savings / \$10.00 ę \$0.00 Value (\$10.00)50-Year Present (Positive (\$20.00)(\$30.00)(\$40.00)(\$50.00)(\$60.00)(\$70.00) Robust Economy Green Economy Slow Growth Regional Wind Limited Investment Carbon Constrained Pleasant Prairie - Zion Energy Center 345 kV

Combined 2015, 2020 & 2026 Pleasant Prairie - Zion Energy Center Project Savings Nominal Discount Rate = 6.7%; In-Service Date: March 2014

> Pleasant Prairie-Zion Energy Center provides net benefits to ATC customers in 4 of 6 futures <u>even</u> <u>if</u> ATC customers pay for entire project.
> Benefits do not

 Benefits do not yet include Insurance Benefit.

Includes PROMOD Economic Benefits (CB Metric) and Loss Savings



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## **2020 Futures Assumptions**

	Internal	Internal	External	External
	Demand	Energy	Demand	Energy
Future	Growth	Growth	Growth	Growth
Robust Economy	2.50%	2.20%	1.60%	2.19%
Green Economy	1.40%	2.20%	0.75%	2.19%
Slow Growth	0.20%	0.10%	0.30%	0.30%
Regional Wind	1.70%	1.40%	1.60%	1.32%
Limited Investment	1.00%	0.70%	0.75%	1.00%
Carbon Constrained	0.20%	0.10%	0.30%	0.30%

Future	Total MISO-Wide Wind	MISO Regional Generation Outlet Study (RGOS) Phase 1 Transmission Overlay
Robust Economy	~13.7 GW	765 kV - UMTDI Local
Green Economy	~25.2 GW	345 kV - Intra Regional Transfer
Slow Growth	~7.7 GW	Overlay Light
Regional Wind	~22.0 GW	765 kV - Intra Regional Transfer
Limited Investment	~8.3 GW	Overlay Light
Carbon Constrained	~11.8 GW	345 kV - UMTDI Local

Full 2020 Futures Matrix and Assumptions available at: <u>http://atc10yearplan.com/A8.shtml</u>



9

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## **2026 Futures Assumptions**

	Internal	Internal	External	External
	Demand	Energy	Demand	Energy
Future	Growth	Growth	Growth	Growth
Robust Economy	2.50%	2.20%	1.60%	2.19%
Green Economy	1.40%	2.20%	0.75%	2.19%
Slow Growth	0.20%	0.10%	0.30%	0.30%
Regional Wind	1.70%	1.40%	1.60%	1.32%
Limited Investment	1.00%	0.70%	0.75%	1.00%
Carbon Constrained	0.20%	0.10%	0.30%	0.30%

Fortune	Total MISO-Wide	MISO Regional Generation Outlet Study (RGOS) Phase 1 Transmission
Future	Wind	Overlay
Robust Economy	~19.6 GW	765 kV - UMTDI Local
Green Economy	~31.6 GW	345 kV - Intra Regional Transfer + Latest RGOS (East)
Slow Growth	~11.9 GW	Overlay Light
Regional Wind	~27.3 GW	765 kV - Intra Regional Transfer + Latest RGOS (East)
Limited Investment	~13.3 GW	Overlay Light
Carbon Constrained	~14.1 GW	345 kV - UMTDI Local

Full 2026 Futures Matrix and Assumptions available at: <u>http://atc10yearplan.com/A8.shtml</u>



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## PROMOD Energy Benefits Description

- PROMOD used to analyze 2020 and 2026 study years
- Difference analysis performed to determine project savings
- All Futures analyzed using ATC Customer Benefit (CB) Metric:

#### Settlements Format for CB Metric

- Load Pays local Locational Marginal Price (LMP)
- Generator Revenues Received at local Gen LMP
- + Cost of Utility Generation (Production Cost)
- FTR Revenue to the Utility
- Loss Refund Revenues for over-collection
- = Impact to Ratepayers



11

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# **Loss Savings Description**

- Loss evaluation is a valuable component of economic project analysis
- PROMOD difference analysis performed to determine system loss savings (\$)
  - Loss savings (MWHrs) calculated from PROMOD
  - Economic value of loss savings determined by pricing losses (MWHrs) at PROMOD area LMPs (\$/MWHrs)



12

#### Next Steps Analysis

- Full Value will be attained with addition of Insurance Value Analysis
  - Insurance Value scenarios are under development
  - Insurance Value methodology being adapted to capture value not monetized in traditional PROMOD N-1 analysis
  - Analysis in process



#### Next Steps Project Status

- Study results preliminary until filed
- Project is part of the initial set of MISO Candidate Multi-Value Projects which are being evaluated
  - MISO analysis expected to be complete June 2011
  - CMVPs that provide regional benefits will be proposed for inclusion in Appendix A of MTEP 11
- Open Houses
  - First anticipated in March 2011
  - Second anticipated in June 2011
- Filing expected by end of 2011



14

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#### Next Steps Project Milestones

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- Open houses
- Finalize planning studies
- File applications with WI and IL Commissions
- 2012
  - Receive decisions from WI and IL Commissions
- 2013
  - Begin construction
- 2014
  - In Service Date



15

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#### Next Steps Preliminary Results

These are preliminary results as of the date of this presentation. ATC's planning analysis is a continuing process, and ATC will provide updated results for this project as appropriate. ATC may also change its planning assumptions or methodology with respect to this project, and any such change may alter the results of its analysis. ATC's definitive planning analysis will be set forth in its CPCN Application for this project.





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17