



2011 Economic Planning Study Results

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ATC Economic Planning

January 30, 2012

Helping to **keep the lights on**,
businesses running and communities strong®

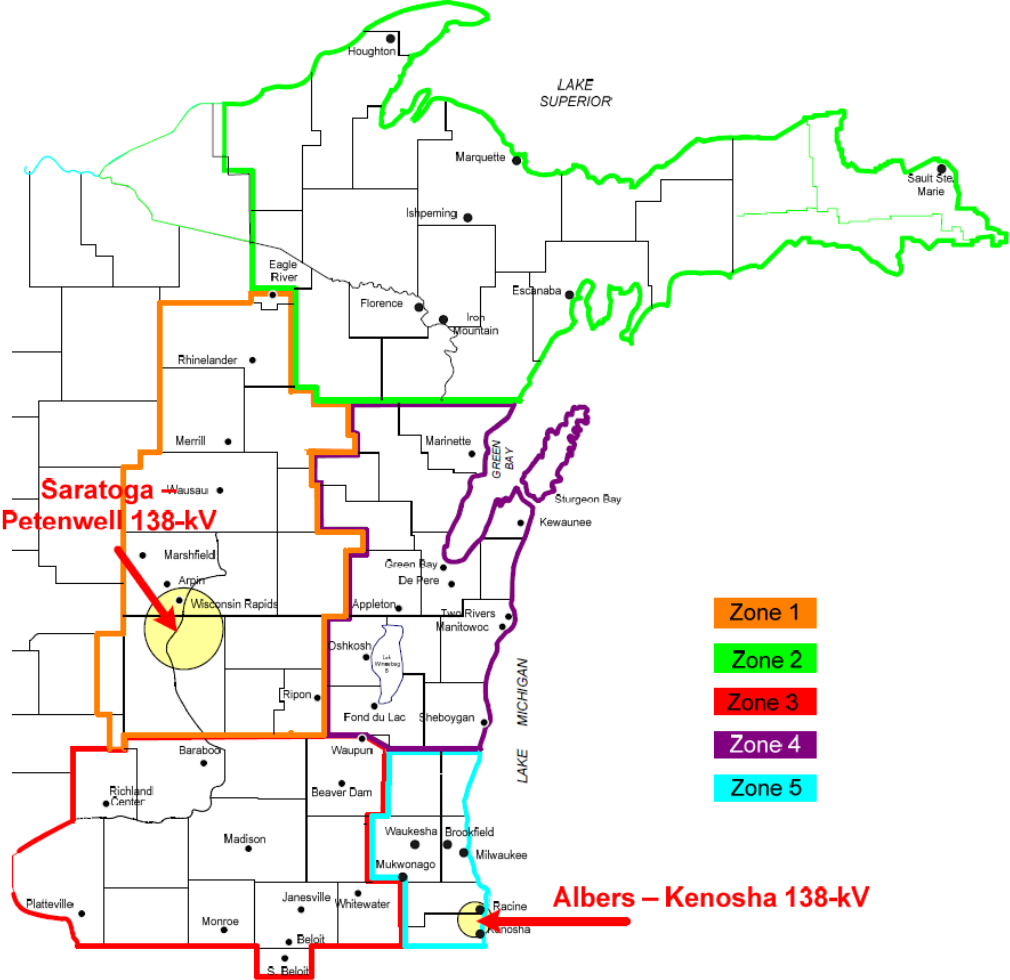


Introduction

- Project Review
 - Albers – Kenosha – Lakeview 138-kV
 - Saratoga – Petenwell 138-kV
- Economic Planning Analysis Metrics
 - Customer Benefit Metric
 - Loss Evaluation
- Project Analysis and Results
- Next Steps

Project Review

ATC Planning Zones





Project Review

- Albers – Kenosha – Lakeview 138-kV
 - Rebuild existing 138-kV Line
 - Alleviate existing and potential future congestion
- Saratoga – Petenwell 138-kV
 - Uprate existing 138-kV line
 - Alleviate existing and potential future congestion
- Alternate: Monroe County – Council Creek SPS (MCCC SPS)
 - In-service with New MOC-COC line (2014)
 - Alleviate existing and potential future congestion
 - Studied as an alternative to Saratoga – Petenwell 138-kV line uprate

PROMOD Energy Benefits Description

- PROMOD used to analyze 2021 study year
- 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

Loss Savings Description

- Loss evaluation is an important 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)

Customer Benefit Metric Components

Customer Benefit Metric Components:

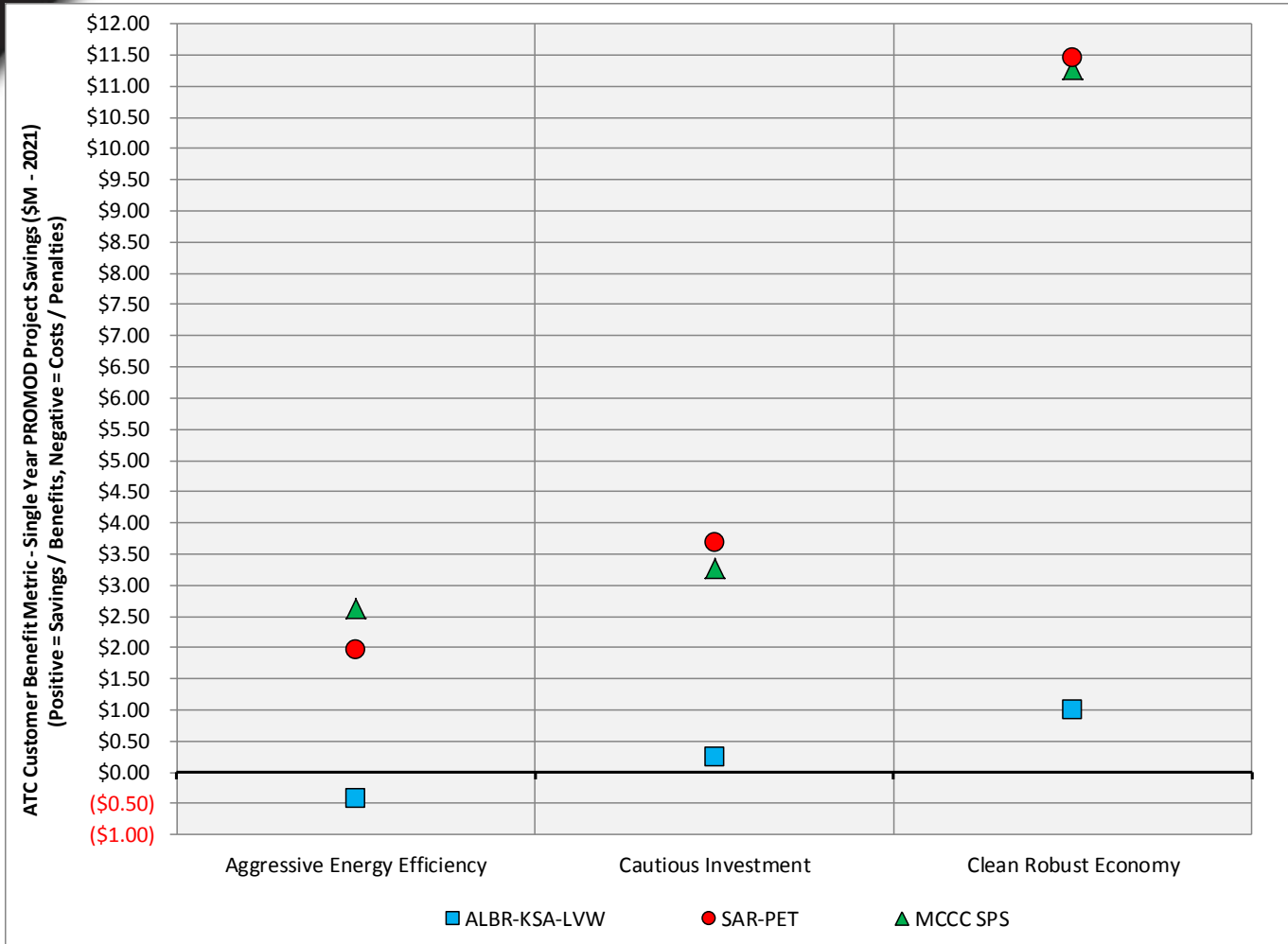
- Net Production Cost excluding IPPs within ATC
- IPP Purchase Cost to Utilities
- Import Cost
- Export Revenue
- Congestion Cost
- Revenue from Existing External FTRs
- ATC Internal FTR Value
- Marginal Loss Cost
- Loss Refund on Internal Transactions and Imports
- “Credit” for Losses Already Captured in Production Cost
- Cost of Load Changes due to Losses
- Cost due to CO₂ Emissions (CO₂ Tax)

ATC 2021 – Analysis Results

- Single-Year PROMOD Savings
 - Shown in Millions of Dollars for 2021 (\$M – 2021)
 - Savings based on difference analysis using Customer Benefit Metric
- 40-Year PROMOD Savings
 - Shown in Millions of Dollars for 2011 (\$M – 2011)
 - Savings based on difference analysis using Customer Benefit Metric
 - Calculations based on:
 - Assumed 40-Year Economic Life of Project
 - 3.0% Inflation Rate
 - 6.7% Nominal Discount Rate

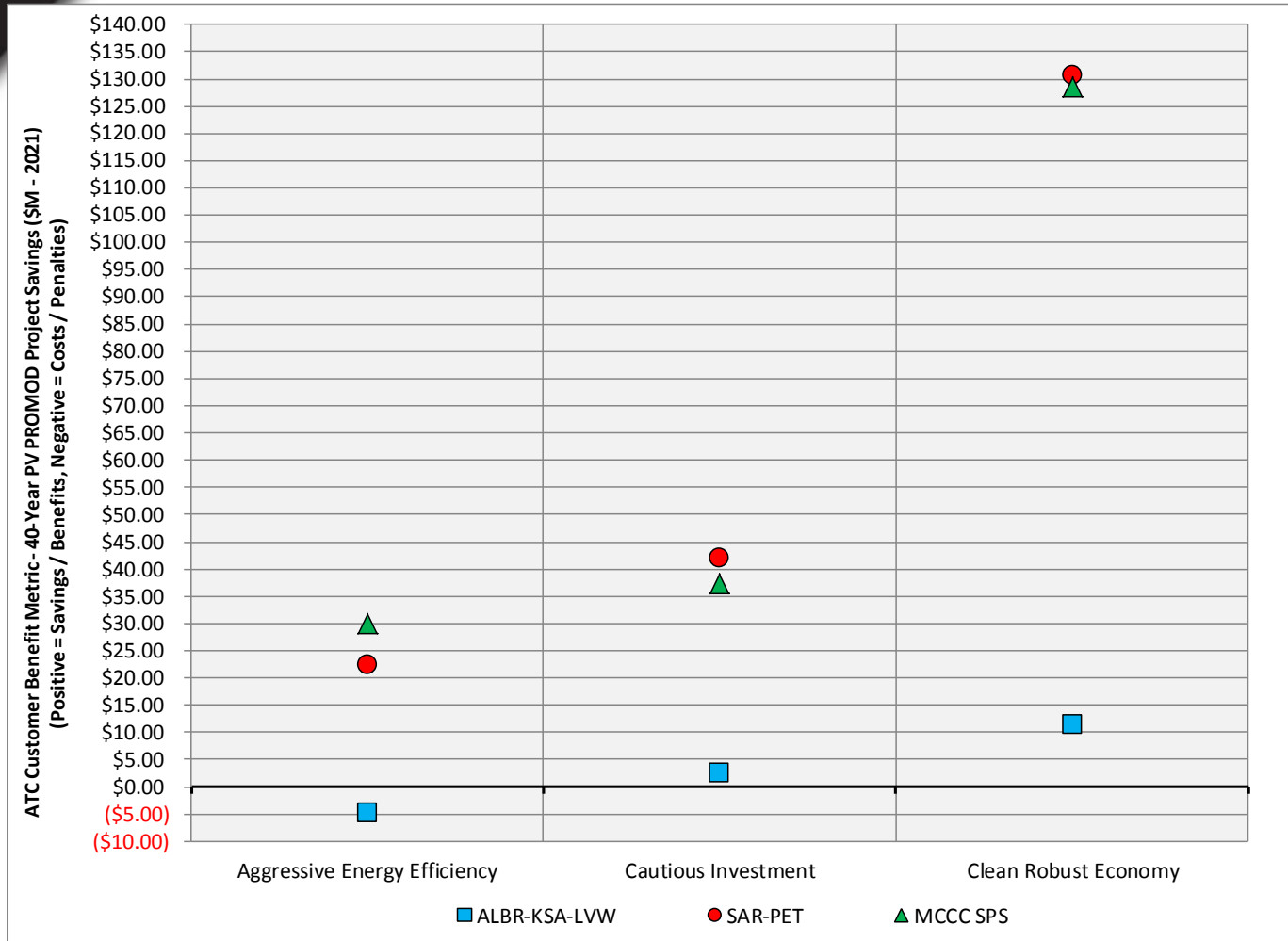
ATC 2021 – Analysis Results

Single-Year PROMOD Savings



ATC 2021 – Analysis Results

40-Year Present Value PROMOD Savings



ATC 2021 – Analysis Results

Albers – Kenosha – Lakeview 138-kV

ATC Customer Benefit Change Description	ATC Benefit Impact (\$ - 2021)		
	Aggressive Energy Efficiency	Cautious Investment	Clean Robust Economy
<i>Net Production Cost excluding IPPs within ATC</i>	(\$106,369)	\$210,657	(\$52,354)
<i>Ipp Purchase Cost to Utilities</i>	(\$114,893)	(\$119,689)	\$284,363
<i>Import Cost</i>	(\$62,916)	\$25,909	\$386,588
<i>Export Revenue</i>	\$299,690	(\$66,464)	\$400,750
<i>Congestion Cost</i>	\$112,149	\$451,657	\$840,556
<i>Revenue from Existing External FTRs</i>	(\$121,216)	(\$46,300)	(\$131,903)
<i>ATC Internal FTR Value</i>	(\$90,754)	(\$203,454)	(\$399,532)
<i>Marginal Loss Cost</i>	(\$146,215)	\$31,043	\$149,288
<i>Loss Refund on Internal Transactions and Imports</i>	\$73,107	(\$15,521)	(\$74,644)
<i>"Credit" for Losses Already Captured in Production Cost</i>	(\$1,192)	(\$4,995)	(\$42,387)
<i>Cost of Load Change due to Losses</i>	(\$65,334)	(\$32,743)	(\$50,444)
<i>Cost due to CO₂ Emissions (CO₂ Tax)</i>	(\$200,649)	\$0	(\$317,156)
Total ATC Customer Benefit:	(\$424,591)	\$230,099	\$993,126

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

Albers – Kenosha – Lakeview 138-kV

Aggressive Energy Efficiency Future

Customer Benefit Savings (\$M - 2021)	(\$0.42)
40-Year PV Customer Benefit Savings (\$M - 2011)	(\$4.84)

ATC Customer Benefit Change Description	ATC Benefit Impact (\$ - 2021)	
<i>Increased Cost due to increased CO₂ Emissions (CO₂ Tax)</i>	(\$200,649)	Penalties
<i>Net Increase in Marginal Loss Cost</i>	(\$146,215)	
<i>Decreased Revenue from Existing External FTRs</i>	(\$121,216)	
<i>Higher IPP Purchase Cost to Utilities</i>	(\$114,893)	
<i>Higher Net Production Cost excluding IPPs within ATC</i>	(\$106,369)	
<i>Decreased ATC Internal FTR Value</i>	(\$90,754)	
<i>Increased Cost of Load Change due to Losses</i>	(\$65,334)	
<i>Higher Import Cost</i>	(\$62,916)	
<i>Decreased "Credit" for Losses Already Captured in Production Cost</i>	(\$1,192)	Benefits
<i>Higher Loss Refund on Internal Transactions and Imports</i>	\$73,107	
<i>Congestion Cost Benefit</i>	\$112,149	
<i>Increased Export Revenue</i>	\$299,690	
Total ATC Customer Benefit:	(\$424,591)	

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

Albers – Kenosha – Lakeview 138-kV

Cautious Investment Future

Customer Benefit Savings (\$M - 2021)	\$0.23
40-Year PV Customer Benefit Savings (\$M - 2011)	\$2.62

ATC Customer Benefit Change Description	ATC Benefit Impact (\$ - 2021)	
<i>Decreased ATC Internal FTR Value</i>	(\$203,454)	Penalties
<i>Higher IPP Purchase Cost to Utilities</i>	(\$119,689)	
<i>Decreased Export Revenue</i>	(\$66,464)	
<i>Decreased Revenue from Existing External FTRs</i>	(\$46,300)	
<i>Increased Cost of Load Change due to Losses</i>	(\$32,743)	
<i>Lower Loss Refund on Internal Transactions and Imports</i>	(\$15,521)	
<i>Decreased "Credit" for Losses Already Captured in Production Cost</i>	(\$4,995)	
<i>Unchanged Cost due to CO₂ Emissions (No CO₂ Tax)</i>	\$0	
<i>Lower Import Cost</i>	\$25,909	Benefits
<i>Net Decrease in Marginal Loss Cost</i>	\$31,043	
<i>Lower Net Production Cost excluding IPPs within ATC</i>	\$210,657	
<i>Congestion Cost Benefit</i>	\$451,657	
Total ATC Customer Benefit:	\$230,099	

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

Albers – Kenosha – Lakeview 138-kV

Clean Robust Economy Future

Customer Benefit Savings (\$M - 2021)	\$0.99
40-Year PV Customer Benefit Savings (\$M - 2011)	\$11.32

ATC Customer Benefit Change Description	ATC Benefit Impact (\$ - 2021)	
<i>Decreased ATC Internal FTR Value</i>	(\$399,532)	Penalties
<i>Increased Cost due to increased CO₂ Emissions (CO₂ Tax)</i>	(\$317,156)	
<i>Decreased Revenue from Existing External FTRs</i>	(\$131,903)	
<i>Lower Loss Refund on Internal Transactions and Imports</i>	(\$74,644)	
<i>Higher Net Production Cost excluding IPPs within ATC</i>	(\$52,354)	
<i>Increased Cost of Load Change due to Losses</i>	(\$50,444)	
<i>Decreased "Credit" for Losses Already Captured in Production Cost</i>	(\$42,387)	Benefits
<i>Net Decrease in Marginal Loss Cost</i>	\$149,288	
<i>Lower IPP Purchase Cost to Utilities</i>	\$284,363	
<i>Lower Import Cost</i>	\$386,588	
<i>Increased Export Revenue</i>	\$400,750	
<i>Congestion Cost Benefit</i>	\$840,556	
Total ATC Customer Benefit:	\$993,126	

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

Saratoga – Petenwell 138-kV

ATC Customer Benefit Change Description	ATC Benefit Impact (\$ - 2021)		
	Aggressive Energy Efficiency	Cautious Investment	Clean Robust Economy
<i>Net Production Cost excluding IPPs within ATC</i>	\$2,435,093	\$9,512,782	\$12,317,268
<i>Ipp Purchase Cost to Utilities</i>	\$1,146,763	\$5,957,274	\$10,218,890
<i>Import Cost</i>	(\$4,356,840)	(\$11,617,831)	(\$17,735,214)
<i>Export Revenue</i>	(\$339,824)	(\$832,074)	(\$2,699,523)
<i>Congestion Cost</i>	\$1,982,916	\$5,727,897	\$9,355,026
<i>Revenue from Existing External FTRs</i>	(\$847,407)	(\$3,615,983)	(\$1,334,542)
<i>ATC Internal FTR Value</i>	(\$420,687)	(\$2,011,599)	(\$5,006,370)
<i>Marginal Loss Cost</i>	(\$241,894)	(\$350,539)	(\$191,707)
<i>Loss Refund on Internal Transactions and Imports</i>	\$120,947	\$175,270	\$95,854
<i>"Credit" for Losses Already Captured in Production Cost</i>	\$20,254	(\$76,535)	\$55,354
<i>Cost of Load Change due to Losses</i>	\$189,791	\$819,606	\$1,827,797
<i>Cost due to CO₂ Emissions (CO₂ Tax)</i>	\$2,280,176	\$0	\$4,553,880
Total ATC Customer Benefit:	\$1,969,288	\$3,688,267	\$11,456,712

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

Saratoga – Petenwell 138-kV

Aggressive Energy Efficiency Future

Customer Benefit Savings (\$M - 2021)	\$1.97
40-Year PV Customer Benefit Savings (\$M - 2011)	\$22.45

ATC Customer Benefit Change Description	ATC Benefit Impact (\$ - 2021)	
<i>Higher Import Cost</i>	(\$4,356,840)	Penalties
<i>Decreased Revenue from Existing External FTRs</i>	(\$847,407)	
<i>Decreased ATC Internal FTR Value</i>	(\$420,687)	
<i>Decreased Export Revenue</i>	(\$339,824)	
<i>Net Increase in Marginal Loss Cost</i>	(\$241,894)	
<i>Increased "Credit" for Losses Already Captured in Production Cost</i>	\$20,254	Benefits
<i>Higher Loss Refund on Internal Transactions and Imports</i>	\$120,947	
<i>Decreased Cost of Load Change due to Losses</i>	\$189,791	
<i>Lower IPP Purchase Cost to Utilities</i>	\$1,146,763	
<i>Congestion Cost Benefit</i>	\$1,982,916	
<i>Decreased Cost due to decreased CO₂ Emissions (CO₂ Tax)</i>	\$2,280,176	
<i>Lower Net Production Cost excluding IPPs within ATC</i>	\$2,435,093	
Total ATC Customer Benefit:	\$1,969,288	

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

Saratoga – Petenwell 138-kV

Cautious Investment Future

Customer Benefit Savings (\$M - 2021)	\$3.69
40-Year PV Customer Benefit Savings (\$M - 2011)	\$42.05

ATC Customer Benefit Change Description	ATC Benefit Impact (\$ - 2021)	
<i>Higher Import Cost</i>	(\$11,617,831)	Penalties
<i>Decreased Revenue from Existing External FTRs</i>	(\$3,615,983)	
<i>Decreased ATC Internal FTR Value</i>	(\$2,011,599)	
<i>Decreased Export Revenue</i>	(\$832,074)	
<i>Net Increase in Marginal Loss Cost</i>	(\$350,539)	
<i>Decreased "Credit" for Losses Already Captured in Production Cost</i>	(\$76,535)	
<i>Unchanged Cost due to CO₂ Emissions (No CO₂ Tax)</i>	\$0	
<i>Higher Loss Refund on Internal Transactions and Imports</i>	\$175,270	Benefits
<i>Decreased Cost of Load Change due to Losses</i>	\$819,606	
<i>Congestion Cost Benefit</i>	\$5,727,897	
<i>Lower IPP Purchase Cost to Utilities</i>	\$5,957,274	
<i>Lower Net Production Cost excluding IPPs within ATC</i>	\$9,512,782	
Total ATC Customer Benefit:	\$3,688,267	

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

Saratoga – Petenwell 138-kV

Clean Robust Economy Future

Customer Benefit Savings (\$M - 2021)	\$11.46
40-Year PV Customer Benefit Savings (\$M - 2011)	\$130.63

ATC Customer Benefit Change Description	ATC Benefit Impact (\$ - 2021)	
<i>Higher Import Cost</i>	(\$17,735,214)	Penalties
<i>Decreased ATC Internal FTR Value</i>	(\$5,006,370)	
<i>Decreased Export Revenue</i>	(\$2,699,523)	
<i>Decreased Revenue from Existing External FTRs</i>	(\$1,334,542)	
<i>Net Increase in Marginal Loss Cost</i>	(\$191,707)	
<i>Increased "Credit" for Losses Already Captured in Production Cost</i>	\$55,354	Benefits
<i>Higher Loss Refund on Internal Transactions and Imports</i>	\$95,854	
<i>Decreased Cost of Load Change due to Losses</i>	\$1,827,797	
<i>Decreased Cost due to decreased CO₂ Emissions (CO₂ Tax)</i>	\$4,553,880	
<i>Congestion Cost Benefit</i>	\$9,355,026	
<i>Lower IPP Purchase Cost to Utilities</i>	\$10,218,890	
<i>Lower Net Production Cost excluding IPPs within ATC</i>	\$12,317,268	
Total ATC Customer Benefit:	\$11,456,712	

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

MCCC SPS

ATC Customer Benefit Change Description	ATC Benefit Impact (\$ - 2021)		
	Aggressive Energy Efficiency	Cautious Investment	Clean Robust Economy
<i>Net Production Cost excluding IPPs within ATC</i>	\$3,481,387	\$9,788,821	\$13,145,648
<i>Ipp Purchase Cost to Utilities</i>	\$1,165,640	\$5,785,251	\$10,253,642
<i>Import Cost</i>	(\$5,627,480)	(\$12,199,459)	(\$18,580,229)
<i>Export Revenue</i>	(\$404,658)	(\$785,994)	(\$3,270,986)
<i>Congestion Cost</i>	\$2,538,766	\$5,773,987	\$10,139,154
<i>Revenue from Existing External FTRs</i>	(\$972,208)	(\$3,620,816)	(\$1,537,025)
<i>ATC Internal FTR Value</i>	(\$633,905)	(\$1,978,983)	(\$5,321,747)
<i>Marginal Loss Cost</i>	(\$429,549)	(\$523,283)	(\$474,774)
<i>Loss Refund on Internal Transactions and Imports</i>	\$214,774	\$261,642	\$237,387
<i>"Credit" for Losses Already Captured in Production Cost</i>	\$23,610	(\$72,504)	\$68,925
<i>Cost of Load Change due to Losses</i>	\$261,320	\$841,955	\$1,740,341
<i>Cost due to CO₂ Emissions (CO₂ Tax)</i>	\$3,001,607	\$0	\$4,867,064
Total ATC Customer Benefit:	\$2,619,304	\$3,270,617	\$11,267,401

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

MCCC SPS

Aggressive Energy Efficiency Future

Customer Benefit Savings (\$M - 2021)	\$2.62
40-Year PV Customer Benefit Savings (\$M - 2011)	\$29.87

ATC Customer Benefit Change Description	ATC Benefit Impact (\$ - 2021)	
<i>Higher Import Cost</i>	(\$5,627,480)	Penalties
<i>Decreased Revenue from Existing External FTRs</i>	(\$972,208)	
<i>Decreased ATC Internal FTR Value</i>	(\$633,905)	
<i>Net Increase in Marginal Loss Cost</i>	(\$429,549)	
<i>Decreased Export Revenue</i>	(\$404,658)	
<i>Increased "Credit" for Losses Already Captured in Production Cost</i>	\$23,610	Benefits
<i>Higher Loss Refund on Internal Transactions and Imports</i>	\$214,774	
<i>Decreased Cost of Load Change due to Losses</i>	\$261,320	
<i>Lower IPP Purchase Cost to Utilities</i>	\$1,165,640	
<i>Congestion Cost Benefit</i>	\$2,538,766	
<i>Decreased Cost due to decreased CO₂ Emissions (CO₂ Tax)</i>	\$3,001,607	
<i>Lower Net Production Cost excluding IPPs within ATC</i>	\$3,481,387	
Total ATC Customer Benefit:	\$2,619,304	

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

MCCC SPS

Cautious Investment Future

Customer Benefit Savings (\$M - 2021)	\$3.27
40-Year PV Customer Benefit Savings (\$M - 2011)	\$37.29

ATC Customer Benefit Change Description	ATC Benefit Impacts (\$ - 2021)	
<i>Higher Import Cost</i>	(\$12,199,459)	Penalties
<i>Decreased Revenue from Existing External FTRs</i>	(\$3,620,816)	
<i>Decreased ATC Internal FTR Value</i>	(\$1,978,983)	
<i>Decreased Export Revenue</i>	(\$785,994)	
<i>Net Increase in Marginal Loss Cost</i>	(\$523,283)	
<i>Decreased "Credit" for Losses Already Captured in Production Cost</i>	(\$72,504)	
<i>Unchanged Cost due to CO₂ Emissions (No CO₂ Tax)</i>	\$0	
<i>Higher Loss Refund on Internal Transactions and Imports</i>	\$261,642	Benefits
<i>Decreased Cost of Load Change due to Losses</i>	\$841,955	
<i>Congestion Cost Benefit</i>	\$5,773,987	
<i>Lower IPP Purchase Cost to Utilities</i>	\$5,785,251	
<i>Lower Net Production Cost excluding IPPs within ATC</i>	\$9,788,821	
Total ATC Customer Benefit:	\$3,270,617	

(\$) = Costs / Penalties

\$ = Savings / Benefits

ATC 2021 – Analysis Results

MCCC SPS

Clean Robust Economy Future

Customer Benefit Savings (\$M - 2021)	\$11.27
40-Year PV Customer Benefit Savings (\$M - 2011)	\$128.47

ATC Customer Benefit Change Description	ATC Benefit Impacts (\$ - 2021)	
<i>Higher Import Cost</i>	(\$18,580,229)	Penalties
<i>Decreased ATC Internal FTR Value</i>	(\$5,321,747)	
<i>Decreased Export Revenue</i>	(\$3,270,986)	
<i>Decreased Revenue from Existing External FTRs</i>	(\$1,537,025)	
<i>Net Increase in Marginal Loss Cost</i>	(\$474,774)	
<i>Increased "Credit" for Losses Already Captured in Production Cost</i>	\$68,925	Benefits
<i>Higher Loss Refund on Internal Transactions and Imports</i>	\$237,387	
<i>Decreased Cost of Load Change due to Losses</i>	\$1,740,341	
<i>Decreased Cost due to decreased CO₂ Emissions (CO₂ Tax)</i>	\$4,867,064	
<i>Congestion Cost Benefit</i>	\$10,139,154	
<i>Lower IPP Purchase Cost to Utilities</i>	\$10,253,642	
<i>Lower Net Production Cost excluding IPPs within ATC</i>	\$13,145,648	
Total ATC Customer Benefit:	\$11,267,401	

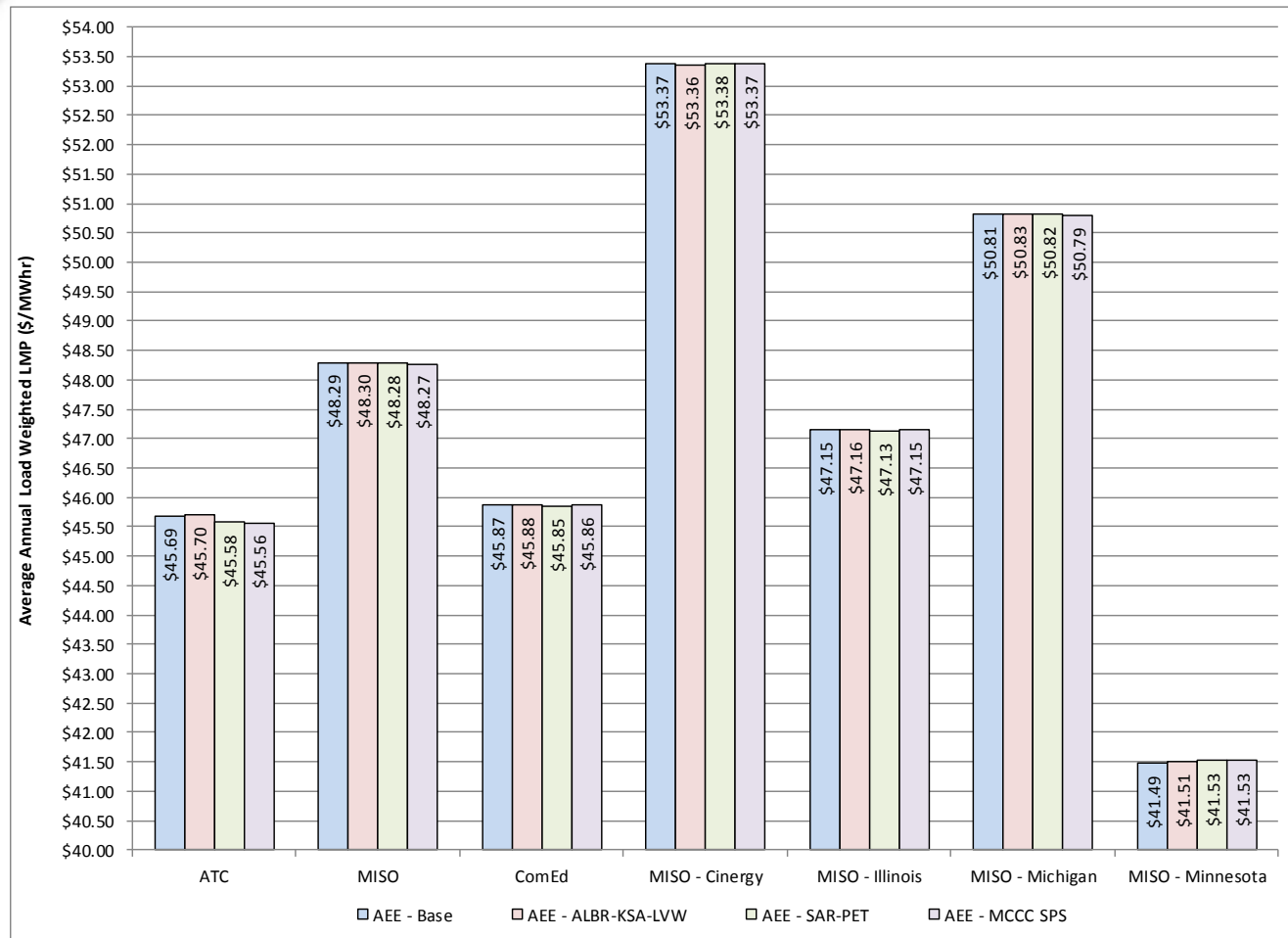
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ATC 2021 – Analysis Results

Load-Weighted Hub LMPs

Aggressive Energy Efficiency Future

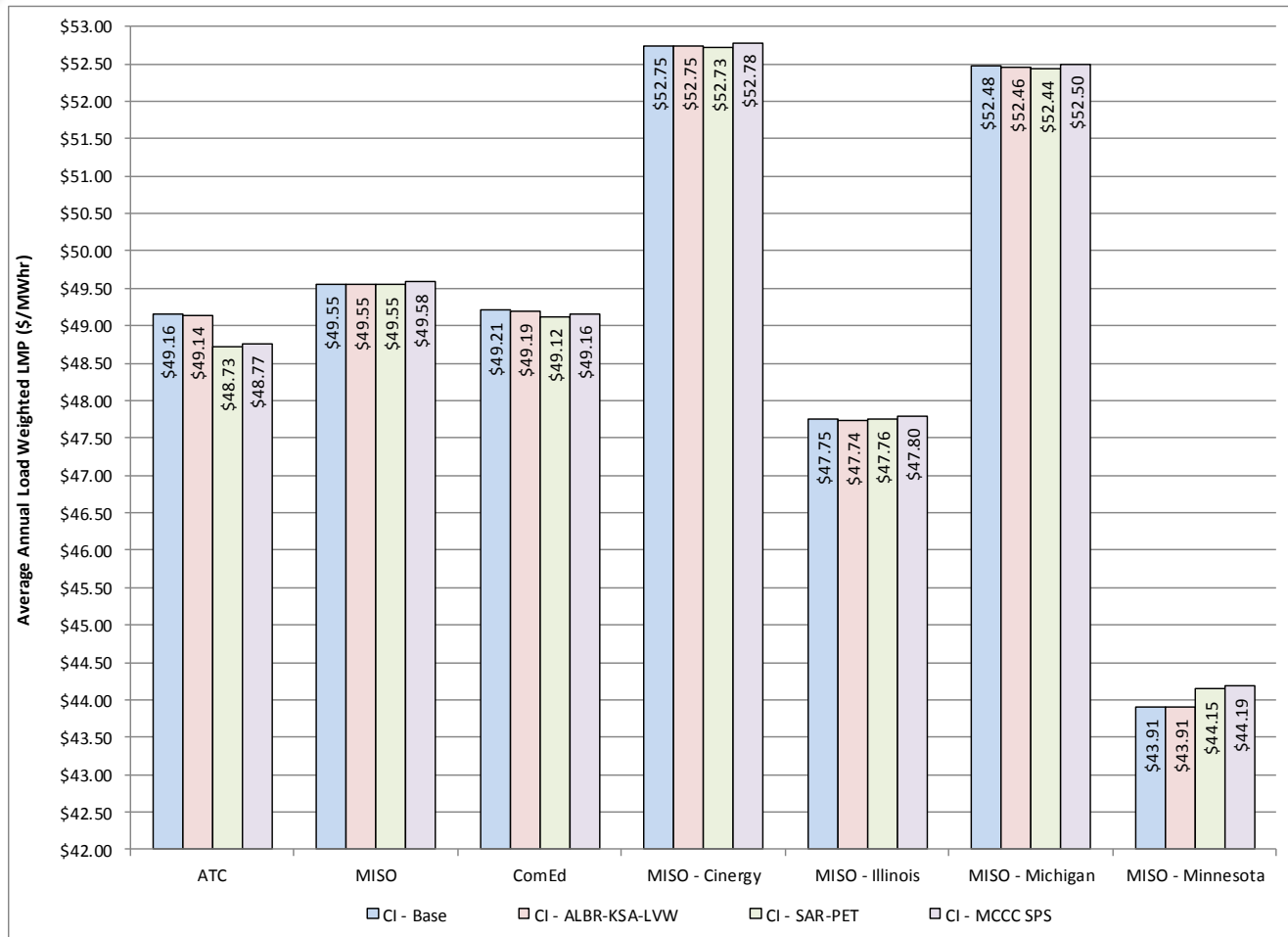




ATC 2021 – Analysis Results

Load-Weighted Hub LMPs

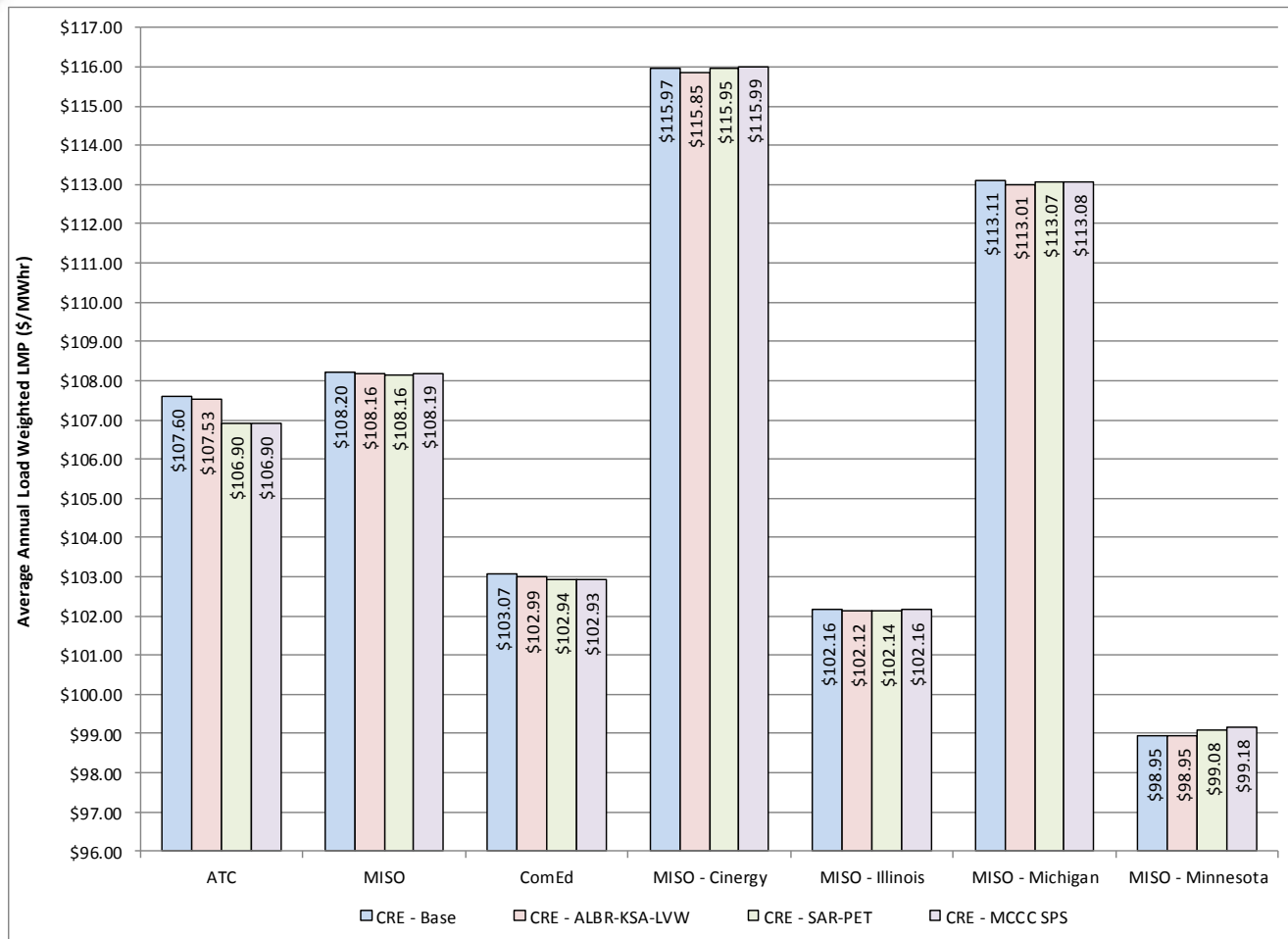
Cautious Investment Future



ATC 2021 – Analysis Results

Load-Weighted Hub LMPs

Clean Robust Economy Future





Next Steps

- Develop Detailed Cost Estimates
- Develop Benefit / Cost Ratios
- Review SAR-PET vs. MCCC SPS
 - Economic and Reliability Impacts
 - Regional Impacts
 - Alternate Connections and Impacts of TYA Projects



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 these projects as appropriate. ATC may also change its planning assumptions or methodology with respect to these projects, and any such change may alter the results of its analysis. ATC's definitive planning analysis would be set forth in a potential future regulatory proceeding (if necessary) for these projects.

Questions?

ATC Economic Planning

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