Badger Coulee Net Benefit Overview

Presented by:

Flora Flygt

Dale Burmester

Preliminary

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

AMERICAN TRANSMISSION COMPANY®

Agenda

- Objectives
- Summary
- ATC Net Benefits
- Project Drivers
  - Regional
  - Reliability
  - Economic
  - Renewable Investment Benefit
- Project Status and Next Steps

Objectives

- Share preliminary results for the project

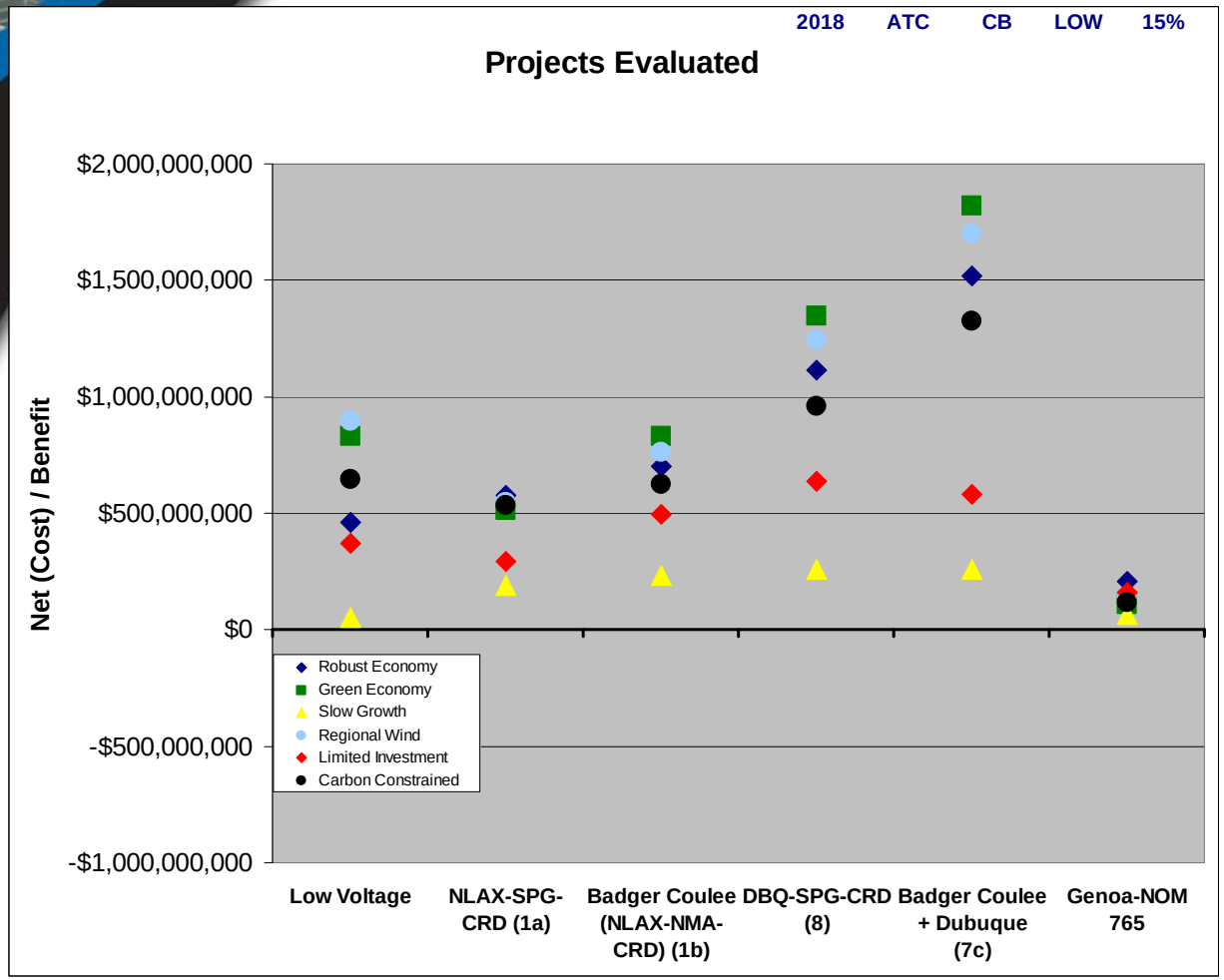
  These are preliminary results as of the date of this presentation. ATC's planning analysis is a continuing process, and ATC will provide updated results for this project as appropriate. ATC may also change its planning assumptions or methodology with respect to this project, and any such change may alter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

- Provide overview of the analytical work done on the Badger Coulee
  - Formerly known as LaCrosse-Madison

Summary

- Badger Coulee was originally analyzed as a local, multiple benefits project – these are the results you are seeing today
- Badger Coulee may receive MISO cost sharing of approximately 85-90%
  - Badger Coulee has been identified by MISO as part of its first Candidate Multi-Value Project Portfolio because it provides significant regional benefits in addition to local
  - ATC customers would pay 10-15%
- Even without MISO cost sharing, Badger Coulee provides benefits to ATC customers that significantly outweigh the anticipated costs
  - Benefits include avoided reliability costs, energy cost savings and renewable investment savings

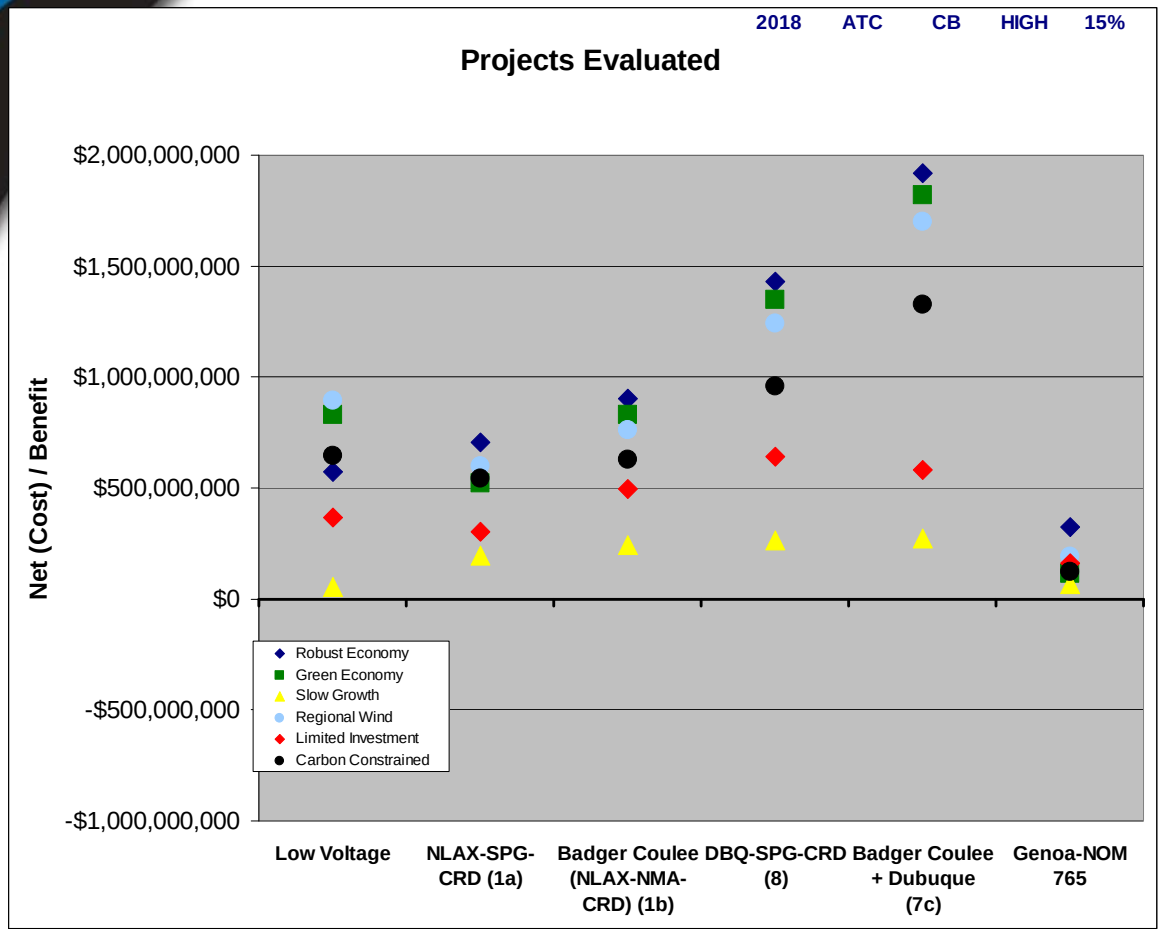
ATC Monetized Net Benefits
Low Estimates – with 85% Cost Sharing



- Badger Coulee provides net benefits to ATC customers in ALL futures
- Badger Coulee line provides additional regional benefits compared to the other alternatives.

Low estimates include lower 2026 estimates of energy savings in two futures, 1a and 765kV

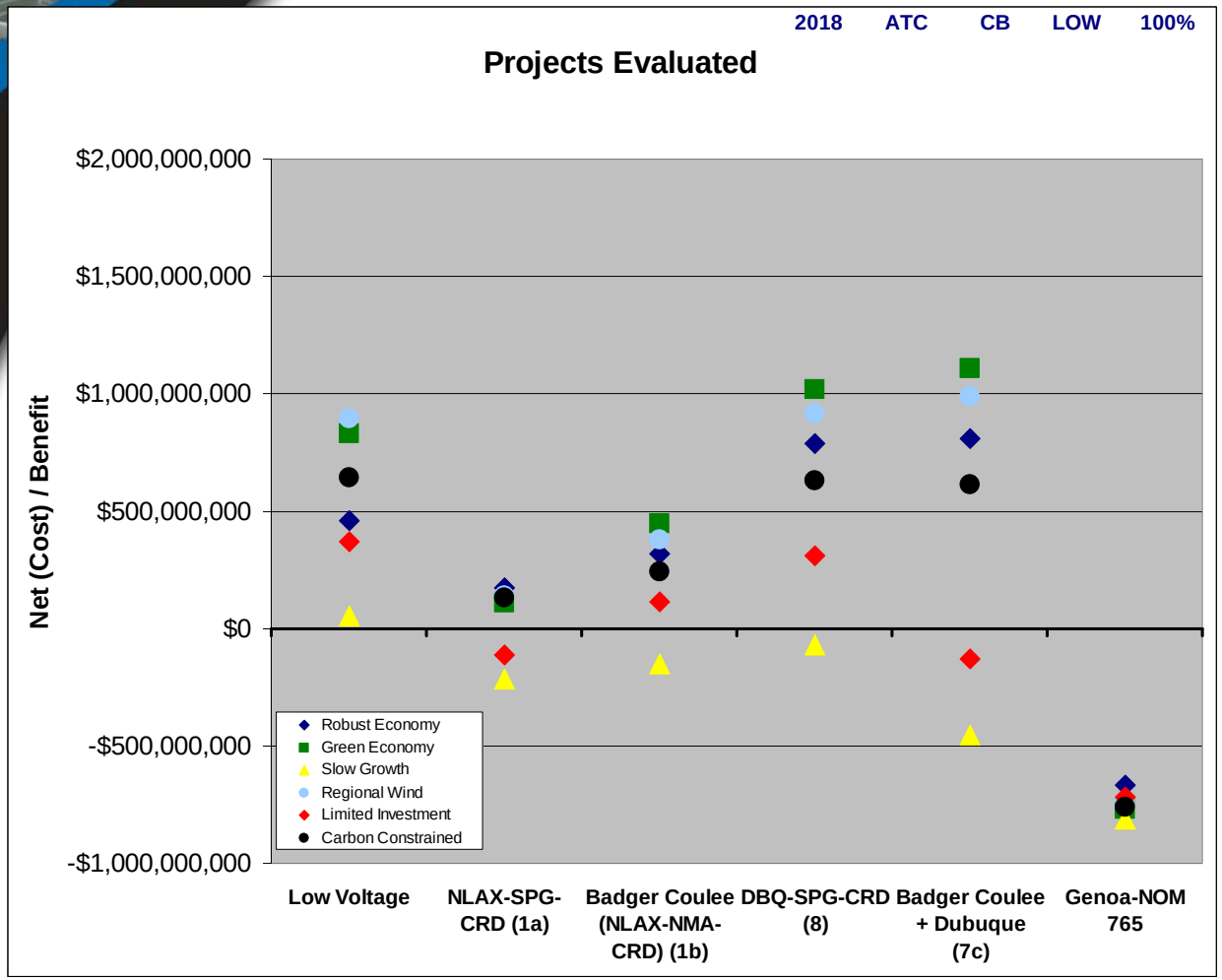
ATC Monetized Net Benefits
High Estimates – with 85% Cost Sharing



- Badger Coulee provides net benefits to ATC customers in ALL futures
- Badger Coulee line provides additional regional benefits compared to the other alternatives.

High estimates include lower 2026 estimates of energy savings in two futures, 1a and 765kV

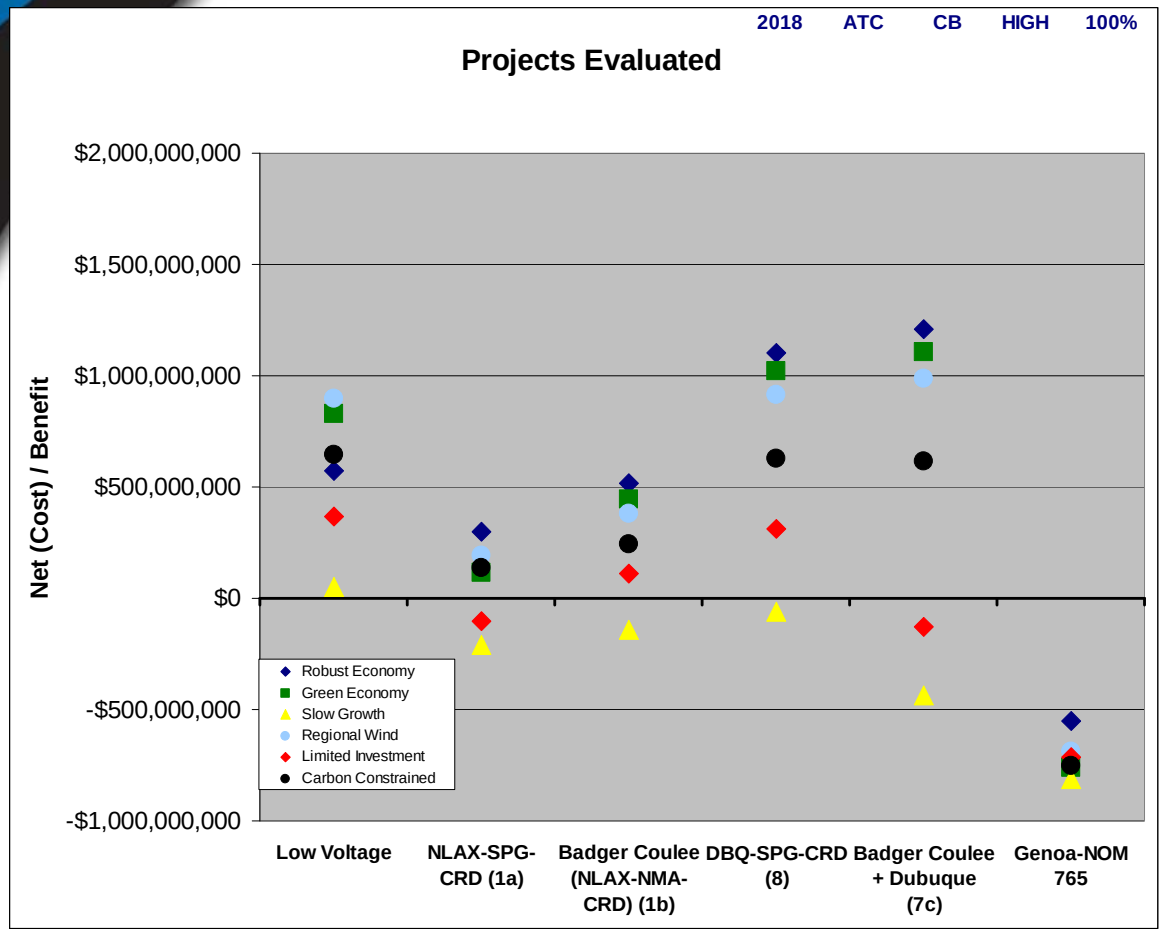
ATC Monetized Net Benefits
Low Estimates – No Cost Sharing



- Badger Coulee provides net benefits to ATC customers in 5 of 6 futures assuming ATC customers pay all costs for project
- Badger Coulee line provides additional regional benefits compared to the other alternatives.

Low estimates include lower 2026 estimates of energy savings in two futures, 1a and 765kV

ATC Monetized Net Benefits High Estimates – No Cost Sharing



- Badger Coulee provides net benefits to ATC customers in 5 of 6 futures assuming ATC customers pay <u>all</u> costs for project
- Badger Coulee line provides additional regional benefits compared to the other alternatives.

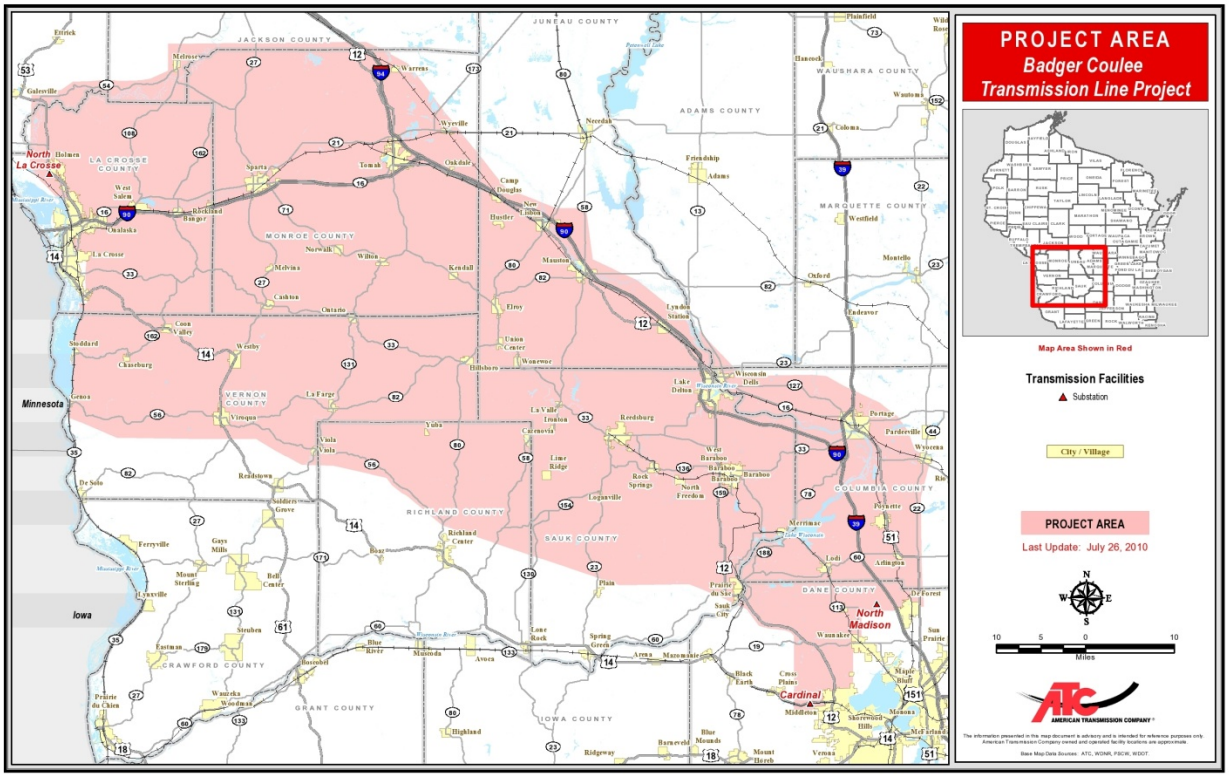
High estimates include lower 2026 estimates of energy savings in two futures, 1a and 765kV

Non-monetized Benefits

NON-MONETIZED BENEFITS		Low Voltage	NLAX-SPG CRD	Badger Coulee	DBQ-SPG-CRD	Badger Coulee + Dubuque	Genoa-NOM 765
Regional wind outlet	qualitative		X	X	X	X	X
Looping LaCrosse 345 kV	qualitative		X	X		X	
MN RES/CVS supported	qualitative		X	X		X	
Competitive / HHI	HHI % improvement	5.52%	9.27%	8.71%	8.84%	11.59%	4.57%
Reliability Indices	RI (larger is better)	1.1	2.6	2.7	3.0	3.8	3.6
Transient Stability Benefit	Ranking (lower is better)	3	2	1	2	1	3

Badger Coulee and the combination of Badger Coulee and the Dubuque lines provide the best combination of non-monetized reliability and market improvement benefits.

Background—The Project



- Preliminary Cost Estimate
  - $425 million (Year of Occurrence)
  - $360 million ($2010)
- Estimated 150-mile 345 kV line
- In-Service Date - 2018

Project Drivers

- Regional Reliability
- Local Reliability
- Economics
  - Energy savings and reduced losses
- Public Policy
  - Greater access to renewable resources

Badger Coulee is a multiple benefits project

Regional Drivers (1)
MISO Multi Value Project (MVP)

- Badger Coulee identified as part of MISO's first Candidate Multi-Value Project Portfolio
- Multi Value Projects (MVP) are large network upgrades that provide regional benefits including public policy needs, economic benefits and reliability
- MVPs cost shared across larger regional area
- The MVP methodology was filed with the FERC on July 15, 2010 and approved on December 16, 2010
  - Has an effective date of July 16, 2010

Regional Drivers (2)
MISO Multi Value Project (MVP)

- MVP cost allocation criteria – must meet one of the three
  - Enable the Transmission System to more reliably and more economically deliver energy in support of public policy requirements
  - Provide multiple types of economic value across multiple pricing zones with a Total MVP Benefit-to-Cost ratio of 1.0 or higher
  - A Multi Value Project must address at least one Transmission Issue associated with a projected violation of a NERC or Regional Entity standard and provide economic value across multiple pricing zones with a Total MVP Benefit-to-Cost ratio of 1.0 or higher

Regional Drivers (3)

- Midwest ISO Regional Generation Outlet Study (RGOS) and MTEP
  - Badger Coulee is identified as part of a set of “Candidate MVP Projects” in draft Executive Summary of RGOS report
    - Project appeared in all 345 kV solution sets proposed by MISO in the Regional Generation Outlet Study (Phase 1)
  - Included in MTEP10 Appendix B as “Starter” projects
- Upper Midwest Transmission Development Initiative
  - Effort undertaken by the governors of five Midwest states
  - Identified “renewable energy corridors” where transmission is needed
  - Badger Coulee and Dubuque-Spring Green-Cardinal are both in renewable transmission corridors identified by the governors

Regional Drivers (4)

- Minnesota RES Update Study
  - LaCrosse-Madison project alleviates stability issues in Twin Cities
- Minnesota Capacity Validation Study
  - Identified La Crosse–Madison 345 kV line as one of the top three projects for providing increased transfer capability
- Appears as solution in several System Planning and Analysis and Definitive Planning Phase studies

Local Reliability Drivers

- Western Wisconsin study
  - Identified $260 million of reliability needs in ATC's footprint in western Wisconsin
  - Identified an additional $95 million of reliability needs in non-ATC part of study area for a total of $355 million (IA and MN)
  - LAX-MAD line will offset need for $140 million for lower voltage upgrades in ATC footprint & $165 million in entire western Wisconsin study area

Construction of a 345kV upgrade will eliminate 50% of the projected local transmission upgrades costs identified in the Western Wisconsin study.

Economic Drivers

- Several planning scenarios were considered
  - Slow Growth, Robust Economy, Regional Wind, Limited Investment, Carbon Constrained, and Green Economy
  - Key assumptions: levels of wind in the MISO footprint, extent of regional transmission build out; generation additions and retirements, and load growth
- ATC estimated the value of reduced energy costs, reduced losses and insurance benefits as part of its traditional economic drivers

Economic benefits for Badger Coulee range from $50 million up to approximately $350 million.

Renewable Investment Benefit

(The benefit formerly known as the Renewable Resource Investment Benefit)

- Quantifies the capital cost savings of tapping high capacity factor wind with new transmission
- Preliminary savings vary under different planning futures
  - Incremental to energy, loss and insurance value
- Proposed benefit has been accepted by the Public Service Commission of Wisconsin but not quantified for a transmission project
  - Alliant Energy's Bent Tree wind case
  - WPS' Crane Creek wind case
- Considered by PSCW in the Paddock-Rockdale case as "Resource Cost Advantage" (qualitative)

Renewable Investment Benefits for Badger Coulee range from $50 million up to approximately $340 million.

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
- ATC has held first round of open houses
- More open houses will be held in 2011
- Filing expected first quarter 2013

Next Steps

- 2010
  - Open Houses were held in September-October
- 2011-12
  - Finalize planning studies
  - Identify potential routes with public involvement
  - Prepare application
- 2013
  - File application with PSCW
- 2014
  - Receive PSCW decision
- 2015
  - Begin construction
- 2018
  - In Service Date