



Renewable Resource Investment Benefit

May 10, 2010

ATC Customer/Stakeholder Meeting





Overview

- ATC is evaluating LaCrosse-Madison, Dubuque-Spring Green-Madison and their alternatives using a combination of benefits
- Local reliability benefits
- Local economic benefits
- Regional reliability benefits
- Regional economic benefits
- Public policy benefits



Public Policy Benefits

- Renewable Resource Investment Benefit
- Increased employment and economic output benefits
- Today we are focusing on the Renewable Resource Investment Benefit



Renewable Resource Investment Benefit

- Definition
 - Value created by being able to build wind in higher capacity wind production areas when you have sufficient transmission to move wind energy to the load centers
- Metric
 - Generally, dollar value of capital cost savings due to building fewer wind generators to produce same energy output

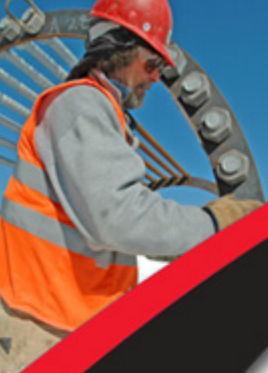
Is this a New Benefit?

- Paddock-Rockdale
 - Resource cost advantage (improving access to lower-cost source of supply outside the ATC footprint)
 - Discussed qualitatively, not quantified
 - PSCW accepted this as part of the justification for Paddock-Rockdale
- WPS' Crane Creek and Alliant's Bent Tree cases
 - PSCW accepted the savings from the higher capacity-factor wind farms v. LMP differentials as part of the justification for approving these projects



Background (1)

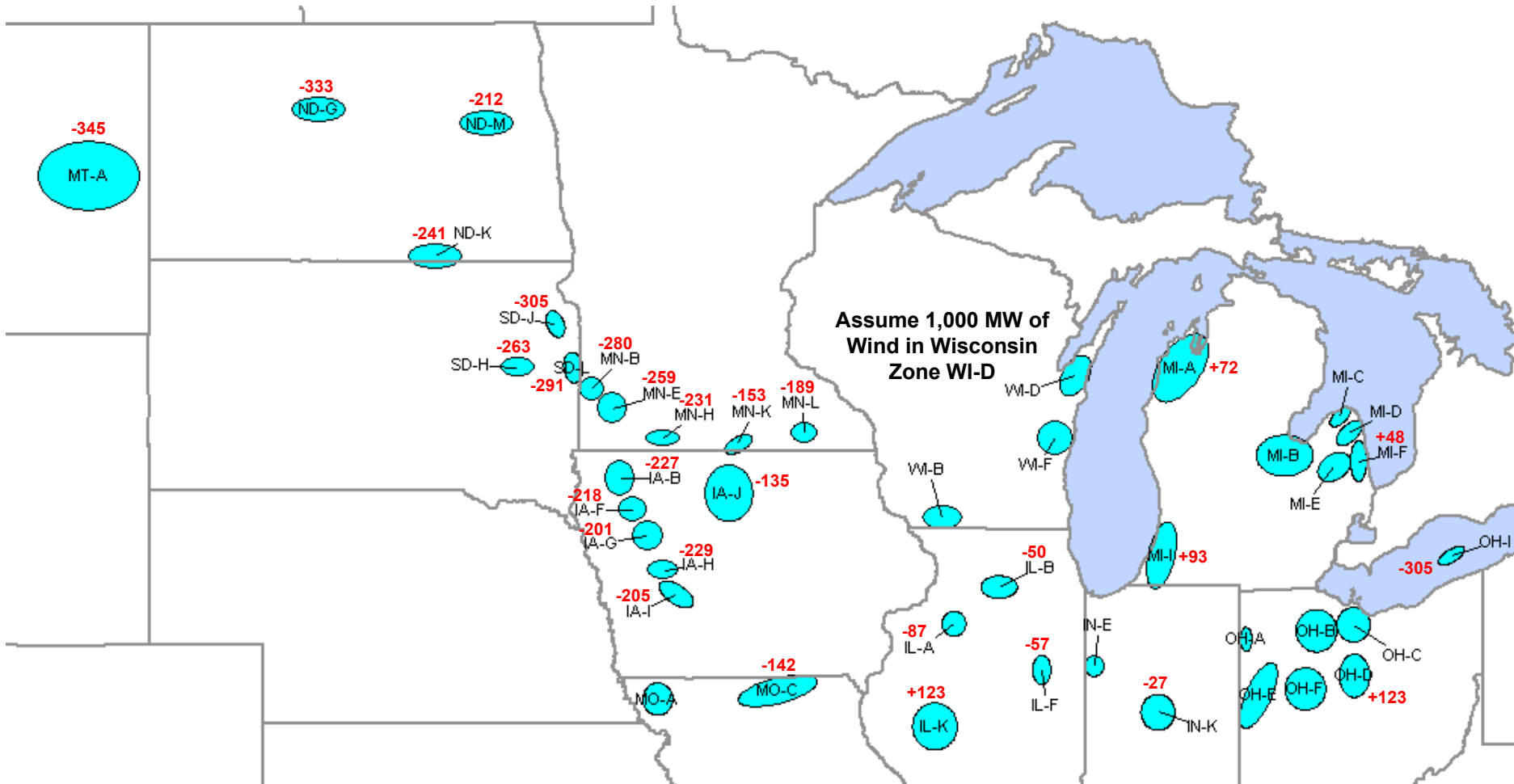
- Renewable resource requirements are expressed in terms of the percent of renewable energy that must be produced
- For wind production, capacity factors vary widely in the Midwest



Background (2)

- Depending on the comparison points, the differential in wind capacity factors between, for example, WI and ND can be as high as 14% (based on MISO data)
- This translates into a 50% increase in number of wind machines needed to produce the same amount of energy (667 MW in ND versus 1,000 in WI)

Reduced Wind MWs need to Match 1,000 MW in WI





Key Assumptions

- From transmission perspective need to make assumptions about how much wind will be facilitated by the proposed transmission project
- With the LaCrosse-Madison project, Dubuque-Spring Green-Madison and their alternatives we are calculating estimated increases in First Contingency Incremental Transfer Capability
 - We believe this is a fair representation of how much wind generation could be facilitated by the various alternatives
- We are also calculating the LMP differentials between outside ATC and inside ATC locations as a measure of the “delivery” cost of such energy



Key Assumptions (2)

- Wind capacity factor differentials
- Capital costs for constructing wind
- Delivery costs of the outside wind
- Real levelized fixed charge rate
- Inflation rate
- Discount rate

Sample Calculation Assumptions

First Contingency Incremental Transfer Capability – Increase	1,000 MW
Wind capacity factor differentials	5%
Capital costs for constructing wind	\$3,000/kw (\$2020)
Delivery costs of the outside wind	(\$5.00)
Real levelized fixed charge rate	13%
Inflation rate	3%
Discount rate	8.5% nominal

Sample Calculation Results

1	FCITC Increase Relative to Base Case (MW) ¹	1000
2	"Outside" Wind Capacity Factor	35.0%
3	Wisconsin Wind Capacity Factor	30.0%

4	% Higher "Outside" Wind Plant Energy Relative to WI	16.7%
5	Wind to Build Inside WI (MW)	1167
6	Wind to Build Outside WI (MW)	1000
7	Wind Capacity that Would Not Need to be Built in WI (MW)	167

10	Capital Cost Saved (2020\$)	\$500,000,000
11	Real Levelized Fixed Charge Rate	13%
12	Annual Capital Savings	\$65,000,000
13	Amount of Wind Energy Generated Outside of WI (MWh)	3,066,000
14	Difference in Average ATC and "Outside" LMPs (\$/MWh)	(\$5.00)
15	"Delivery" Cost of the Outside Wind	(\$15,330,000)
16	Annual Renewable Resource Investment Benefit (RRIB)	\$49,670,000
19	Present Value of the RRIB (2010\$)	\$379,279,205

Conclusions

- “Resource cost advantage” has been accepted as a benefit by the Public Service Commission of Wisconsin both in transmission and renewable resource decisions
- The wind differentials between Wisconsin and states west of Wisconsin create the opportunity for significant savings
- Renewable Resource Investment Benefit (resource cost advantage of wind) represents a significant opportunity for savings for Wisconsin customers



Questions and Next Steps

If you have additional questions or if you would like to schedule a discussion of the Renewable Resource Investment Benefit, please contact:

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