



Economic planning

ATC utilizes three methods to determine which projects have the potential for economic benefits:

1. Stakeholder Input and Analyses (FERC Order 890)
2. Reliability Project Screening
3. Congestion Severity Index

These methods are described below.

Stakeholder Input and Analyses

In March 2008, Federal Energy Regulatory Commission (FERC) Order 890-A took effect. As part of this order, FERC requires a coordinated, open, and transparent transmission planning process on both a local and regional level. To comply with these requirements, ATC submitted a compliance filing on Order 890-A that provides a timeline of actions to ensure that the economic planning process is both coordinated and open.

Annually, ATC will use a process with consistent timelines that combines stakeholder input, historical data, future line flow forecasts, and updated information on the electric system to identify transmission upgrades for economic evaluation.

Each year:

- During February, we hold an initial stakeholder meeting to review the market congestion summary and potential fixes and to discuss economic study scenarios, drivers, ranges, and assumptions.
- By March 1, we work with stakeholders to request and prioritize new/other economic studies and recommend study assumptions.
- By April 15 – we identify preliminary areas of economic study, study assumptions and models and solicit further comments from stakeholders.
- By May 15 – we finalize areas of economic study, study assumptions and models to be used in analysis.
- By November 15 – we provide a summary of the results of the economic analyses to our stakeholders.

ATC conducts analyses of the projects identified for study over several months' time and posts the key results, including the extent to which these savings offset project costs. When the expected benefits of a studied project are high enough to justify its costs, the process of developing it as a formal proposal is begun.



As a result of the 2011 ATC/stakeholder collaborative process, we are performing economic analyses on the following ATC facilities:

Order 890 Economic Studies

- Saratoga – Petenwell 138-kV Line
- Albers – Kenosha 138-kV Line

Studies will be performed and results shared with stakeholders over the course of the year. In addition, customers and stakeholders who would like to request specific economic studies can do so if they are willing to pay for the studies and are willing to have the results posted publicly.

Reliability Project Screening

Economic analyses were performed on 19 projects from the 2010 10-Year Assessment project list to determine whether those projects were candidates for acceleration or deferral based on economic considerations. Please refer Table EP-1 for the list of projects screened. Prioritization of this list of 19 projects was based primarily on the availability of redispatch and capital costs of the projects; however, lower cost projects specifically identified by the ATC planning department were also included in the study. Generation interconnection and distribution interconnection projects were not eligible for inclusion in this list. Further, capacitor bank projects were not considered since the voltage benefits provided were not captured by the PROMOD software analysis. Finally, projects with in-service dates prior to 2013 were not considered since development of those projects was too far underway to make scheduling changes. As a result of this screening, one project (Project 18 from Table EP-1: Fairwater – Mackford Prairie plus Ripon – Metomen) was identified as having potential economic benefits and a candidate for acceleration of the in-service date.

A similar analysis will be performed in the 2012 10-Year Assessment based upon the 2011 Assessment project list.

Congestion Severity Index

ATC developed a Congestion Severity Index for use as the screening indicator to track locations on the transmission system where constraints to the delivery of economic energy exist. The Congestion Severity Index combines the financial impact of constraints with the frequency of constraints. The financial impact during an hour is the calculated theoretical maximum number of dollars that could be paid into the market due to congestion on the constraint in question. The sum of the total financial impacts for each hour during which the constraint occurs forms the basis of the Congestion



10-Year Assessment

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2011

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Severity Index. This information is used as a starting point in determining areas of the system where potential upgrades may be cost-effective. This data is combined with stakeholder input and ATC planning recommendations to identify a group of projects to study. A list of the most severe market constraints in the Day Ahead and Real Time markets for 2010 is given in Tables ZS-5 and ZS-6, respectively. Maps depicting the geographic locations of the most severe market constraints in the Day Ahead and Real Time markets for 2010 are shown in Figures ZS-27 and ZS-28, respectively.



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2011

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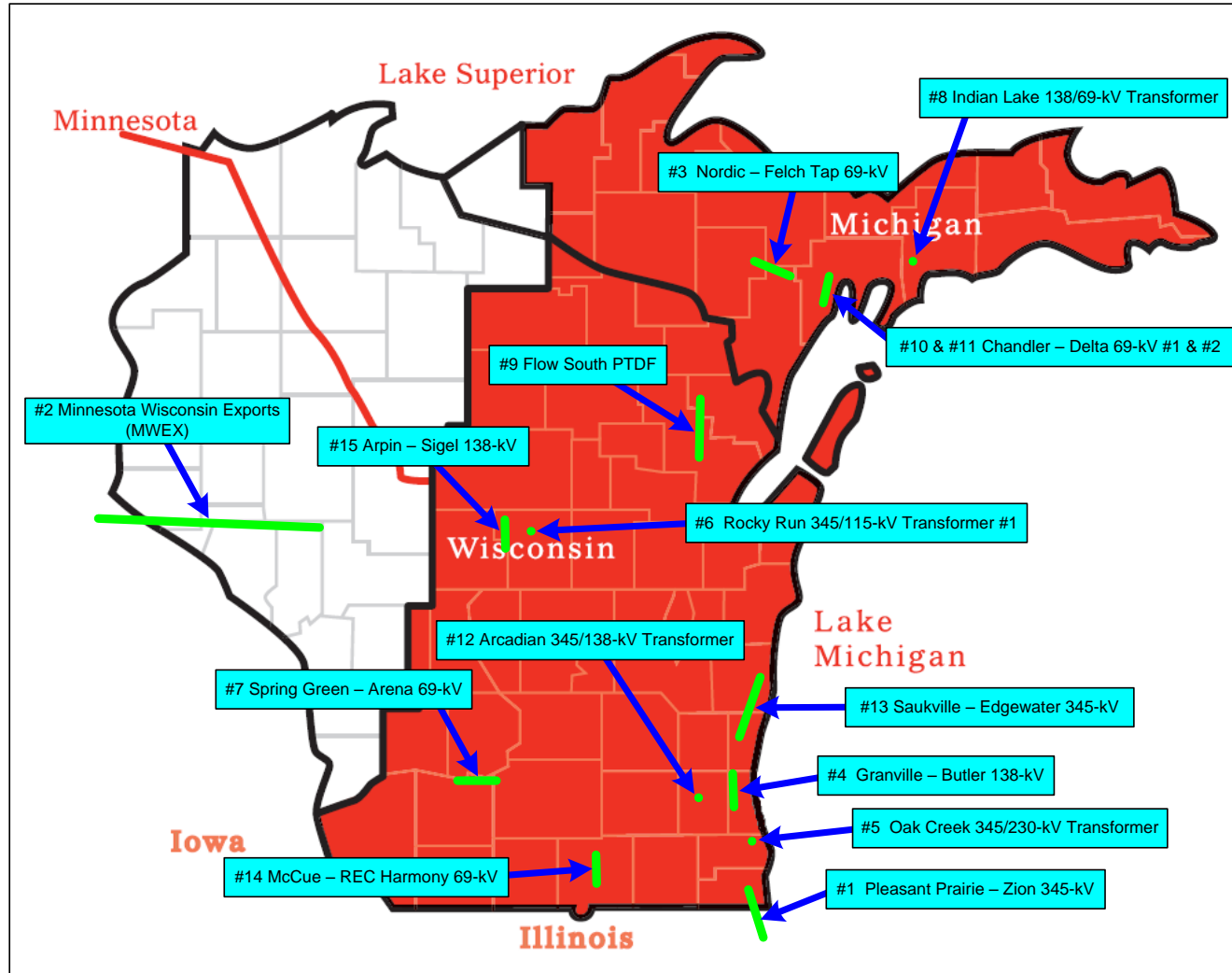
Table ZS-5
ATC Day Ahead Market Most Limiting Elements, 2010

Severity Index	Hours	Constraint Element	Potential Solution
37.58	2,975	Pleasant Prairie - Zion 345-kV	Upgrade equipment at Zion Substation in ComEd system (In-Service March 2011) Pleasant Prairie - Zion Energy Center 345-kV line (Proposed 2014)
12.56	512	Minnesota to Wisconsin Exports Interface (MWEX)	Monroe County - Council Creek 161-kV line (Proposed 2014) Badger Coulee 345-kV line (Proposed 2018)
7.93	3,473	Nordic - Felch Tap 69-kV	Chandler 138/69-kV T2 (Proposed 2012) Flow Control Device (Proposed 2014) Arnold 345/138-kV Transformer (Proposed 2015)
7.52	415	Granville - Butler 138-kV	Upgrade equipment at Butler Substation (Planned 2012)
5.34	794	Oak Creek 345/230-kV Transformer T884	Area transmission outages may have contributed to this constraint
5.09	123	Rocky Run 345/115-kV Transformer T1	Monroe County - Council Creek 161-kV line (Proposed 2014)
4.56	313	Spring Green - Arena 69-kV	Rockdale - West Middleton 345-kV (Planned 2013)
3.69	977	Indian Lake 138/69-kV Transformer T2	Flow Control Device (Proposed 2014)
3.04	1,441	Flow South PTDF	Flow Control Device (Proposed 2014)
2.57	1,420	Chandler - Delta 69-kV CKT 1	Chandler - Delta 69-kV Ckt 1 and Ckt 2 Line Uprate (In-Service 2010)
2.56	1,403	Chandler - Delta 69-kV CKT 2	Chandler - Delta 69-kV Ckt 1 and Ckt 2 Line Uprate (In-Service 2010)
1.71	61	Arcadian 345/138-kV Transformer T2	Replace Arcadian Transformers T2 and T3 (Provisional 2020)
1.53	144	Saukville - Edgewater 345-kV	ATC is investigating a future 345-kV N-S path in the Fox Valley corridor
1.34	292	McCue - REC Harmony Tap 69-kV	Construct 69-kV double-circuit line between McCue and Lamar (Provisional 2019)
1.16	109	Arpin - Sigel 138-kV	Monroe County - Council Creek 161-kV line (Proposed 2014) Badger Coulee 345-kV line (Proposed 2018)
109.19	18,403	Total for All ATC Day Ahead Constraints - 2010	

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Figure ZS-27
ATC Day Ahead Market Most Limiting Elements, 2010





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Table ZS-6
ATC Real Time Market Most Limiting Elements, 2010

Severity Index	Hours	Constraint Element	Potential Solution
36.99	529	Pleasant Prairie - Zion 345-kV	Upgrade equipment at Zion Substation in ComEd system (In-Service March 2011) Pleasant Prairie - Zion Energy Center 345-kV line (Proposed 2014)
10.42	1,035	Nordic - Felch Tap 69-kV	Arnold 345/138-kV Transformer (Proposed 2015) Flow Control Device (Proposed 2014) Chandler 138/69-kV T2 (Proposed 2012)
8.59	96	Granville - Butler 138-kV	Upgrade equipment at Butler Substation (Planned 2012)
6.87	44	Rocky Run 345/115-kV Transformer T1	Monroe County - Council Creek 161-kV line (Proposed 2014)
6.63	87	Indian Lake 138/69-kV Transformer T2	Flow Control Device (Proposed 2014)
6.27	7	Minnesota to Wisconsin Exports Interface (MWEX)	Monroe County - Council Creek 161-kV line (Proposed 2014) Badger Coulee 345-kV line (Proposed 2018)
4.43	95	Spring Green - Arena 69-kV	Rockdale - West Middleton 345-kV (Planned 2013)
3.66	308	Oak Creek 345/230-kV Transformer T884	Area transmission outages may have contributed to this constraint
2.95	273	Chandler - Delta 69-kV CKT 2	Chandler - Delta 69-kV Ckt 1 and Ckt 2 Line Uprate (In-Service 2010)
2.62	13	Rocky Run 345/115-kV Transformer T4	Monroe County - Council Creek 161-kV line (Proposed 2014)
2.00	42	Kenosha - Lakeview 138-kV	Pleasant Prairie - Zion Energy Center 345-kV line (Proposed 2014)
1.70	24	Elkhart Lake - Forest Junction 138-kV	Upgrades associated with G611 (Planned 2010) ATC is investigating a future 345-kV N-S path in the Fox Valley corridor
1.49	33	Albers - Kenosha 138-kV	Pleasant Prairie - Zion Energy Center 345-kV line (Proposed 2014) Economic Analysis 2011
1.38	24	Arpin - Sigel 138-kV	Monroe County - Council Creek 161-kV line (Proposed 2014) Badger Coulee 345-kV line (Proposed 2018)
1.34	4	Paddock 345/138-kV Transformer T21	Paddock - Rockdale 345-kV (In-Service March 2010)
111.68	3,141	Total for All ATC Real Time Constraints - 2010	

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Figure ZS-28
 ATC Real Time Market Most Limiting Elements, 2010

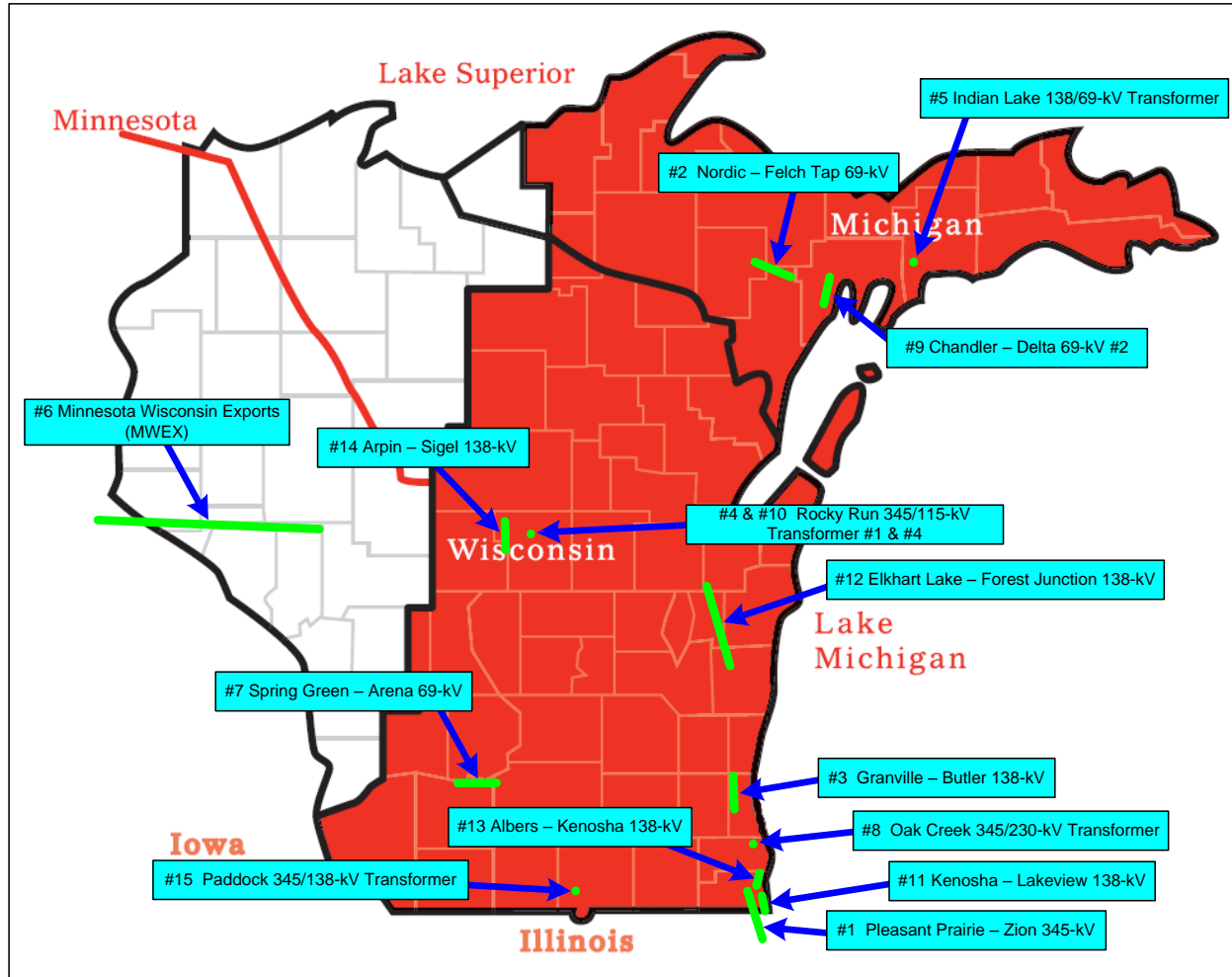




Table EP-1
10-Year Assessment Projects Screened

System Additions		Planning Zone
1	Construct Spring Valley-Twin Lakes-South Lake Geneva 138-kV line	3
2	Construct Cardinal-Blount 138-kV line	3
3	Rebuild/convert Straits-Pine River 138-kV lines and uprate overhead portions of Straits-McGulpin 138-kV circuits #1 & #3	2
4	Rebuild Colley Road-Brick Church 69-kV line	3
5	Construct 18th Road-Chandler double circuit 138-kV lines and operate at 138/69-kV	2
6	Construct Shoto to Custer 138-kV line and install a 138/69-kV transformer at Custer Substation	4
7	Construct a Hubbard-East Beaver Dam 138-kV line	3
8	Construct a new Arnold 345-kV Substation and install a 345/138-kV transformer	2
9	Construct new 138-kV line from North Lake Geneva to South Lake Geneva Substation and install a 138/69-kV 100 MVA transformer at South Lake Geneva Substation	3
10	Uprate Winneconne-Sunset Point 69-kV line	1
11	Construct a Lake Delton-Birchwood 138-kV line	3
12	Uprate Munising-Seney-Blanney Park 69-kV line	2
13	Construct a new 69 kV-line from McCue - Lamar and upgrade the existing single circuit to double-circuit 69-kV	3
14	Uprate Y87 North Monroe-South Monroe 69-kV line	3
15	Construct second Dunn Road-Egg Harbor 69-kV line	4
16	Replace two existing 138/69-kV transformers at Glenview Substation with 100 MVA transformers	4
17	Replace two existing 138/69-kV transformers at Sunset Point Substation with 100 MVA transformers	4
18	Construct Fairwater-Mackford Prairie 69-kV line and a second Ripon - Metomen 69-kV line	1
19	Rebuild the Sun Valley tap to Oregon 69-kV line	3