STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

Application of AMERICAN TRANSMISSION COMPANY LLC for a Certificate of Public Convenience and Necessity, pursuant to Section 8-406.1 of the Illinois Public Utilities Act, to construct, operate, and maintain a new 345,000 volt electric transmission line in Lake County, Illinois	:	No. 11-0661

AFFIDAVIT OF JAMAL KHUDAI

STATE OF WISCONSIN)
) SS:
COUNTY OF WAUKESHA)

I, Jamal Khudai, being first duly sworn, declare under oath as follows:

1. I hold the position of Principal Engineer - Strategic Projects, at ATC Management Inc., the corporate manager for American Transmission Company LLC.

2. Attached as ATC Ex. 1.0 Revised is a true and correct copy of my Direct Testimony filed in Docket No. 11-0661 that was prepared by me or under my direction or control. The one revision to my Direct Testimony since it was prefiled in September was the update of my title. Attached to ATC Ex. 1.0 Revised is a copy of ATC Ex. 1.1 which was filed as part of my Direct Testimony.

3. Attached as ATC Ex. 5.0 is a true and correct copy of my Rebuttal Testimony filed in Docket No. 11-0661 that was prepared by me or under my direction or

control. Attached to ATC Ex. 5.0 is a copy of ATC Ex. 5.1 which was filed as part of my Rebuttal Testimony.

4. If I were today asked the questions set forth in ATC Ex. 1.0 Revised and ATC Ex. 5.0, I would respond with the answers set forth in those documents.

5. I intend that ATC Ex. 1.0 Revised along with ATC Ex. 1.1, and ATC Ex. 5.0 along with ATC Ex. 5.1 become part of the record in this proceeding as my testimony before this Commission.

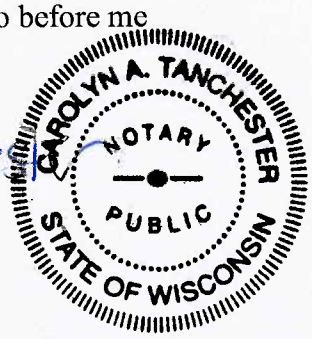
Jamal M. Khudai

Jamal Khudai

SUBSCRIBED AND SWORN to before me
this 4th day of January, 2011.

Carolyn A. Tanchester

Notary Public



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Direct Testimony (Revised) of

Jamal Khudai

Principal Engineer – Strategic Projects
American Transmission Company

Q. Please state your name and business address.

A. My name is Jamal Khudai. My business address is W234 N2000 Ridgeview Parkway Court, Waukesha, Wisconsin.

Q. By whom are you employed?

A. I am employed by ATC Management Inc., the corporate manager of American Transmission Company LLC. In my testimony, I will refer to these entities collectively as "ATC."

Q. How long have you been employed by ATC?

A. For eight years, since September, 2003.

Q. What is your present position with ATC?

A. I hold the position Principal Engineer in the Strategic Projects Department.

Q. How long have you held that position?

A. I have been in that position since December 20, 2011.

Q. What are your responsibilities for ATC?

A. I perform or review the following types of work with respect to ATC's major transmission line projects:

- Conducting scenario analyses to ensure recommended transmission system upgrades are robust, in light of significant uncertainties in demand and energy growth, new generation, renewable portfolio standards (RPS), demand side management (DSM), fuel prices, and environmental regulations.

- Coordinating with Midwest ISO (MISO), generation entities, regulatory agencies, local load serving utilities, and other electric transmission providers to obtain necessary inputs into the modeling process in accordance with the requirements of FERC Order 890.
- Monitoring market congestion and developing cost-effective mitigation projects.
- Performing system evaluations utilizing various industry standard tools like Power Flow, Contingency Analysis, Transfer Analysis, and Security Constrained Economic Dispatch (SCED).

Q. What other positions have you held at ATC?

A. I began working at ATC in 2003 as a Senior Transmission Planning Engineer and was promoted to Manager of Transmission Planning for the Major Projects Group in 2006. I moved to Manager of Economic Planning in 2009, and held that position when my testimony was originally prepared.

Q. Prior to joining ATC what did you do?

A. I worked for Commonwealth Edison Company in Illinois for six years as a Principal Distribution Planning Engineer and a Senior Transmission Planning Engineer.

Q. Please describe your educational background.

A. I have a Bachelor of Engineering degree in Electrical Engineering from Mehran University of Engineering and Technology in Sindh, Pakistan, and a Master of Science degree in Electric Power from Rensselaer Polytechnic Institute in Troy, New York.

Q. Aside from that, have you taken any additional courses, classes, or seminars?

A. I have taken numerous classes and attended many seminars related to aspects of electric utility engineering, including training in performing power flow analyses using PSS/E developed by Siemens, and Security Constrained Economic Dispatch using PROMOD, developed by Ventyx.

Q. Please describe what your responsibilities have been in relation to the proposed Pleasant Prairie to Zion Energy Center transmission line.

A. ATC's economic planning group, under my direction and supervision, has analyzed the congestion on the ComEd-ATC interface, developed a cost-effective solution, and tested it against alternatives using a variety of assumptions about future economic scenarios.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide a general description of and background for the project, explain the economic analysis of the project, and to describe the basis for the data provided to Dr. Karl McDermott for his analysis of the effect of the proposed project on the development of a competitive market for electricity and savings for Illinois customers.

Q. What is attached to your testimony?

A. Attached to my testimony, marked as ATC Ex. 1.1, is a Planning Analysis containing figures, data, and analysis on which much of my testimony will be based. This Planning Analysis was prepared under my direction and control, both for ATC's internal management and for regulatory approvals. I will refer to portions of this document in my testimony where greater detail may be useful. I note that the Planning Analysis contains Critical Energy Infrastructure Information, as that is defined in the federal regulations, and therefore we have produced separate public and confidential versions.

American Transmission Company

Q. Please describe the applicant, American Transmission Company.

A. ATC, in 2001, became the first multi-state, transmission-only public utility. ATC owns transmission facilities in four states (Illinois, Michigan, Minnesota, and Wisconsin). ATC was certified as a public utility in the State of Illinois in ICC Docket No. 01-0142. ATC is essentially owned by its customers: the utilities, municipals, and coops that contributed their transmission assets to form ATC. Since 2001, ATC has built approximately 530 miles of new transmission lines.

ATC is a transmission owning member of the Midwest Independent Transmission System Operator, or MISO, and an associate member of PJM Interconnection LLC, or PJM. ATC's rates are regulated by the Federal Energy Regulatory Commission; the siting of its new facilities is regulated by state commissions.

The Pleasant Prairie to Zion Energy Center Project

Q. Generally, what is the proposed Pleasant Prairie to Zion Energy Center (PLP-ZEC) transmission line?

A. We are proposing a new single circuit, 345-kV transmission line connecting ATC's Pleasant Prairie substation in Wisconsin to the existing ComEd substation in Illinois called Zion Energy Center substation.

Q. Does the PLP-ZEC line need commission approval from another state?

A. Yes, the Wisconsin portion of the line is under the jurisdiction of the Public Service Commission of Wisconsin. ATC will be making an application to the PSCW for a Certificate of Public Convenience and Necessity analogous to the approval ATC seeks from this commission.

Q. What is the purpose of the proposed project?

A. The transmission system of the Southeastern Wisconsin – Northern Illinois study area is in need of infrastructure improvement to enhance the market economic performance for Wisconsin, Illinois and the region. There has been chronic historical market congestion, in both PJM and MISO markets, of thousands of hours each year and there is forecasted transmission congestion in the study area. The Pleasant Prairie to Zion Energy Center 345-kV project was developed to provide benefit to customers and provide for a more competitive electric market by relieving congestion in the study area, while allowing the most economic dispatch of generation and providing additional reliability related benefits.

Q. What is meant by "congestion" on transmission lines?

A. Congestion means the denial, by the transmission system operator, of requested transmission transactions due to inadequate transmission transfer capacity. Congestion on transmission lines prohibits cheaper generation from getting into the market on the other side of the congested interface. In addition, but for safeguards such as the Independent Market Monitor, congestion could facilitate the attempt of a particular seller to exercise market power.

Q. How does congestion on transmission lines affect the competitive market for electricity?

A. Energy is sold in the market on a Day Ahead and Real Time basis, with the most cost-effective generators being dispatched first. However, transmission constraints can alter the dispatch sequence when congestion prevents cost effective energy from getting to the loads that need to be served. Projects that relieve congestion will allow electric utilities to

import less-expensive power on transmission lines when available, and also to sell power to higher-cost regions during some hours.

Q. How much congestion has there been on the lines connecting ATC to ComEd in recent years?

A. A historical indicator of economic impact is the MISO Market Constraint data. The 345-kV constraint related data in Table 1 reflects the increasing congestion over the past 3 years. The data is shown in hours of congestion. The hours show the amount of time during the year that the congestion occurs for the relevant constraints. Further detail pertaining to this information can be found in Section 2.0 of the Planning Analysis, ATC Ex. 1.1.

The recent project to increase the rating of the existing Pleasant Prairie - Zion 345-kV line completed in March 2011 is a complementary project to get some interim congestion relief in the short term and better interface performance in the long term. However, market data and analytical studies indicate that congestion within the corridor may have shifted to the 138-kV system following the upgrade of the Pleasant Prairie – Zion 345-kV line.

Also, According to the MISO State of the Market Report, Pleasant Prairie – Zion is one of the most frequently activated market-to-market constraints on the MISO system. Specifically, the IMM stated that "the most common flowgates for market-to-market coordination are those that limit flows from west-to-east, including Pleasant Prairie – Zion." Please see Planning Analysis Section 2.1 for further discussion and details.

Further, according to the PJM 2011 Quarterly State of the Market Report, in the first quarter of 2011 the total congestion costs related to the Pleasant Prairie to Zion 345-kV line persisted and totaled $2.5 million. Please see Planning Analysis section 2.2 for further discussion and details.

Table 1: MISO market constraint summary – Includes congestion related to the SE WIS Interface in addition to its individual 345-kV and 138-kV elements.

Year	**Day Ahead Hours of Congestion**	**Real Time Hours of Congestion**
2011 (through August)	2,070	341
2010	3,052	571
2009	906	168
2008	448	144

Q. How will the proposed project relieve the congestion which is common on the existing lines?

A. ATC analyzed the congestion in this corridor within its PROMOD analysis. It was determined that the addition of PLP-ZEC relieved the congestion within this corridor in all study years and all six future economic scenarios studied. The tables below show the impact on shadow price and hours bound. Table 2 provides information on the impact of PLP-ZEC on the corridor for the 2015, 2020 and 2026 PROMOD study years. Further detail pertaining to this data can be found in Section 8.0 of the Planning Analysis report.

Table 2: 2015, 2020 and 2026 PROMOD Analytical Congestion

	Southeast Wisconsin - Northeast Illinois Interface	
Study Year & Future	**No PLP-ZEC Hours of Congestion**	**With PLP-ZEC Hours of Congestion**
2015	1,217	0

2020 Robust Economy	532	0
2020 Green Economy	361	0
2020 Slow Growth	3,657	0
2020 Regional Wind	63	0
2020 Limited Investment	3,365	0
2020 Carbon Constrained	1,479	0
2026 Robust Economy	971	0
2026 Green Economy	381	0
2026 Slow Growth	3,922	0
2026 Regional Wind	96	0
2026 Limited Investment	3,622	0
2026 Carbon Constrained	1,000	0

Summary of Economic Analysis and Results

Q. Please summarize the economic analysis you performed to analyze the PLP-ZEC project.

A. We used an industry accepted methodology for analyzing potential economic projects. First, we defined six plausible "futures," or long-term economic scenarios intended to describe widely variable conditions. While we do not actually attempt to predict which of these futures is most likely to occur, if the project performs well in multiple futures, we can have a high degree of confidence that it will provide benefits to customers despite the uncertainty of what may happen years from now.

Second, we analyzed energy-cost savings using PROMOD, a computer market simulation tool. While PROMOD can be used to generate data for a variety of metrics for analyzing projects, for calculating benefits in Illinois, we used the load-weighted locational marginal prices, which is appropriate for a market-based system like Illinois.

Q. What is the Strategic Flexibility methodology, and how is it used?

A. Strategic Flexibility is an analytical approach that assists organizations in making major investment decisions in an uncertain environment. The premise of Strategic Flexibility is that, because we cannot know the future, major projects should be tested against a range of plausible futures. These plausible futures are to "bound" the range of plausible outcomes, and not to identify the most likely future. The project is tested against each of the futures and should be chosen only if it is successful in most of the futures or if the risks inherent in the futures in which the project is not successful can be mitigated. The objective is to identify projects that are robust across a range of plausible futures.

Working with stakeholders in an open and collaborative process, ATC developed six plausible futures and coordinated with the Midwest ISO, which was developing future economic scenarios of its own.

ATC built up the futures by identifying the variables or drivers that would most impact the results of a transmission project like PLP-ZEC (such as load and energy growth, generation retirement and expansion, fossil-fuel costs, use of renewable energy, increased environmental regulation, Renewable Portfolio Standards, and MISO RGOS/ MVP transmission overlays) and by determining how those drivers would behave in each scenario. Futures were specified for 2020 and 2026. The "plausible futures" were designed to describe the possible market conditions that could exist in 2020 and 2026. Further details on the drivers, their ranges, and the values used for a particular future are provided in Section 5.2.5 Futures Matrices in the Pleasant Prairie to Zion Energy Center Planning Analysis document.

Q. Please describe the six futures you considered.

A. For model year 2020, and 2026, the following futures were considered:

Robust Economy Future

High energy and peak-demand rates of growth characterize this future because the economy recovers and expands vigorously resulting in higher energy consumption, fewer coal plant retirements and generation additions. In addition, a vigorous economy allows Wisconsin to increase its Renewable Portfolio Standard to 20% increasing renewable generation inside and outside the state. A 765-kV transmission overlay developed in MISO's Regional Generator Outlet Study is included in the model.

Green Economy Future

In this future the economy experiences increased investment and growth due to policy initiatives like enhanced Renewable Portfolio Standards and carbon regulations. Energy and peak demand grow with energy growing faster than peak, coal retirements increase and the increased need for energy in the green economy is met by considerable additional wind power inside and outside ATC. The transmission overlay included was a 345-kV overlay from MISO's Regional Generator Outlet Study.

Slow Growth Future

Energy and peak demand grow at a slower rate in this future due to a sluggish economy inside and outside ATC. Some smaller, older coal-fired units within ATC are retired for economic reasons, new generation is not built and Wisconsin's Renewable Portfolio Standard remains at 10%. A smaller transmission overlay is included in the model.

Regional Wind Future

In this future the potential of the Upper Midwest to produce and transfer its full potential of wind energy is realized. ATC and regional energy and peak demand growth are at higher levels and substantial amounts of older, smaller coal plants are retired. This combination causes the need for new generation and much of that is in the form of wind, with Wisconsin's Renewable Portfolio Standard at 20%. A larger transmission overlay, the 765kV overlay from MISO's Regional Generator Outlet Study, is included.

Limited Investment Future

The main driver of this future is reduced capital investment in new energy infrastructure, especially new baseload generation. There is less need for such investment because energy and peak-demand growth is modest within ATC and MISO due to an economy that is not growing at a robust rate. There are limited generator additions or retirements within ATC and Wisconsin's Renewable Portfolio Standard remains at 10%. Regional wind development is also at a relatively low level and the most limited transmission expansion option, Overlay Light, is included in the model.

Carbon-Constrained Future

The basic premise of this future is that carbon emissions must be reduced due to federal regulation, either a cap-and-trade system specifying increasingly stringent emissions levels or a direct tax on carbon emissions. Energy and peak-demand growth inside and outside ATC are at low levels due to demand reduction and energy efficiency. Many smaller, older coal plants within ATC are retired and generator additions with ATC are mainly additional wind facilities. The transmission expansion option included is a local 345kV overlay from MISO's Regional Generator Outlet Study.

More information on all these futures can be found in the PLP-ZEC Planning Analysis, Section 5.2.4.

Q. Please describe the PROMOD tool you used.

A. PROMOD is a security-constrained economic dispatch computer simulation program developed by NewEnergy Associates, now known as Ventyx. The program simulates both the electric generation and transmission systems. It determines the least-cost generation dispatch over a large area for every hour while simultaneously respecting all known transmission constraints (flowgates). This is the same approach that Locational Marginal Price (LMP) markets, like the MISO and PJM markets, use to dispatch generation. In short, PROMOD simulates the LMP market. As a result, PROMOD can be used to help evaluate the cost-effectiveness of transmission projects, like PLP-ZEC, in a market environment. All of the transmission and generation within MISO and PJM were simulated in PROMOD for the PLP-ZEC analysis.

Q. How did you use PROMOD to analyze the PLP-ZEC line?

A. To analyze a project like PLP-ZEC using PROMOD, a case is developed without the new project and run for a given time period or year, using the assumptions corresponding to a particular future economic scenario. The same case is then run again with the primary difference being the addition of the new project. The cost difference is then calculated between the cases to determine the incremental value to customers. This same process was done for all six of the futures.

Q. What study assumptions did you make in using PROMOD?

A. ATC began with PROMOD models developed by MISO and made numerous assumptions based on the year of the study and the future that was being studied. To provide multiple data points from which to do a Present Value calculation, PROMOD simulations were done for 2015 and for each of the futures described above for a 2020 and 2026 model. Key study assumptions include energy growth rates, generation retirements and additions, environmental regulations, coal and natural gas prices and the transmission overlay that exists. For a detailed description of the PROMOD study assumptions and methodology, please refer to Appendix E of the Planning Analysis.

Q. Please describe the LLMP metric.

A. LLMP savings measure the difference (with and without the proposed project) in LLMP savings across a particular footprint. This metric is appropriate for markets where generation is unbundled from load, and ATC chose to use this metric to evaluate benefits to Illinois.

Q. Is this the same metric that ATC uses to evaluate the market impact of a transmission project like this one in Wisconsin?

A. Not exactly, no. Wisconsin does not have the same type of market system as in place in Illinois, as Wisconsin is more of a traditionally regulated market. In Wisconsin, ATC considers an "ATC customer benefit metric" which takes into account the bundled relationship between load and generation and Wisconsin regulations about the treatment of utilities' generator profitability. Essentially, it starts with adjusted production cost and takes into account financial congestion hedges and the treatment of loss refunds in the MISO market. Further monetized values for physical loss reduction savings and insurance benefits are added to the metric.

Q. Given this background, how were the benefits of the PLP-ZEC project estimated?

A. Customer energy cost savings were estimated using the PROMOD model described above, for the years 2015, 2020 and 2026.

Q. Please summarize the results of the economic analysis.

A. Table 3 clearly shows that constructing the PLP-ZEC transmission line would provide significant economic benefits within the State of Illinois in a wide range of futures. The present value (PV) of LLMP savings for the futures typically range between $670 million and $2,883 million and are positive in every future. The annual benefits are shown in Tables 5, 6 and 7 in Section 5.1 of the Planning Analysis report for each of the futures for each of the metrics and the savings are positive in all but one of the years and futures studied. Total costs of the project to Illinois customers will range from $0 to approximately $3 million. If the project is deemed an MVP in MISO, the costs to Illinois customers will be approximately $3 million. If the project is not deemed an MVP, the cost will be $0.

Table 3: Present Value of Aggregate Annual PROMOD Energy Benefits – Illinois Total Load Cost [$ - Millions - 2010]

Alternative	Robust Economy	Green Economy	Slow Growth	Regional Wind	Limited Investment	Carbon Constrained
PLP-ZEC	1,827	726	1,354	670	2,883	910

Q. Were there other benefits that were not monetized?

A. Yes, there were a number of reliability based benefits that were not monetized such as improved local generation stability margins, elimination of permanent Operating Guides,

increased transfer capability, additional infrastructure to better handle multiple contingency and maintenance events, and ability to enable protection system upgrades.

Q. Has ATC's Planning Analysis been submitted to MISO?

A. No. MISO is evaluating this project as part of their MVP portfolio and is performing an independent analysis. We expect to have MISO's final analysis in advance of its publication of MTEP 2011 in December, 2011.

Q. What information did you supply to Dr. McDermott in support of his economic analysis?

A. The following information was provided to Dr. McDermott:

- Illinois Area Loads from the 2015, 2020, and 2026 PROMOD analysis
- Illinois Area Load LMPs from the 2015, 2020, and 2026 PROMOD analysis
- Illinois Area Total Load Cost from the 2015, 2020, and 2026 PROMOD analysis
- Illinois Area Generation from the 2015, 2020, and 2026 PROMOD analysis
- Illinois generator data including dispatch level, unit capacity, unit production cost and dispatch price for select hours from the 2015, 2020, and 2026 PROMOD analysis

Analysis of Alternatives

Q. What alternatives to the PLP-ZEC transmission line did ATC consider to address the congestion issue?

A. As discussed in Section 3.0 of the Planning Analysis, ATC considered the following alternatives:

- PLP-ZEC (this project)

- Low Voltage Alternative

Q. Were any other possible alternatives eliminated?

A. Yes, ATC considered the following alternatives which were subsequently dismissed as described in Section 3.3 "Alternatives Considered but Rejected" of the Planning Analysis:

- Bain to Zion Energy Center 345-kV Alternative
- Racine to Zion Energy Center 345-kV Alternative
- Loop-in of the Arcadian to Zion 345-kV line to the Pleasant Prairie Substation

Q. Please describe in more detail the 138-kV system upgrades you considered.

A. The Low Voltage Alternative Transmission Project is a combination of rebuild and uprate efforts of existing 138-kV transmission facilities located in Wisconsin and Illinois. The Low Voltage Alternative consists of modification to the following existing facilities:

- Bain to Kenosha 138-kV line (ATC)
- Kenosha to Lakeview 138-kV line (ATC)
- Lakeview to Zion Dist 138-kV line (ATC to ComEd)
- Zion to Waukegan 138-kV line (ComEd)
- Bain 345/138 kV transformers (ATC)

The Low Voltage alternative has a project cost estimate of $43,756,489. The cost estimate related to the facility work in Illinois was a "generic facility estimate" and is therefore considered a low cost estimate. Further detail on the Low Voltage Alternative can be found in Section 3.2 of the Planning Analysis report.

Q. Please explain your comparison of the PLP-ZEC line to the 138-kV system upgrades.

A. ATC analyzed the economic and reliability impacts of both the PLP-ZEC line and the Low Voltage Alternative to determine which would provide the most cost effective solution and provide the greatest benefit. The PLP-ZEC project has a total estimated cost of $28,856,000 and the Low Voltage has a total estimated cost of $43,756,489. Based on the various performance metrics described in the Planning Analysis and the associated project costs, ATC determined that additional upgrades would need to be made to the Low Voltage Alternative to obtain a comparable performance to a 345-kV based project and that the PLP-ZEC project is the preferred solution.

Q. Could non-transmission alternatives, such as demand side management, effectively eliminate the congestion on the current lines?

A. The data available to ATC does not show that any non-transmission alternative can meet all of these needs and provide all of these benefits in as cost-effective and technically feasible a manner as the PLP-ZEC project. Section 10.0 "Non-Transmission Alternatives" of the PLP-ZEC Planning Analysis provides more detail.

Effect of the Proposed Project on Reliability

Q. Understanding that the PLP-ZEC line is not required to address reliability concerns, what effect will the PLP-ZEC line have on reliability?

A. One of ATC's main organizational purposes is to plan and build transmission facilities to provide for an adequate and reliable transmission system that meets the needs of all transmission users. Although the primary need driver for this project is economics, there are system reliability improvements that provide additional benefits and they are as follows:

- Generation angular stability margin improvement
- Regional and local transfer capability improvement
- Operating guide elimination – Preliminary analysis shows that the following Operating Guides and Special Protection Schemes can be eliminated.
    - Lakeview – Zion Operating Guide (2008–S–018–E-ATC, "FG 3067").
    - South Ties Interfaces Standing Operating Guide (2009-S-017-E-ATC).
    - Zion TDC 282 – Lakeview (L28201) 138-kV Tieline Operation (ComEd SPOG 3-10).
    - Zion Generation Stability Trip [SPS] (ComEd SPOG 1-3-K).
- Increased system contingency robustness for NERC category B and C contingencies.
- Dynamic reactive support
- Reduction in steady state losses
- Enables system protection improvements

Interactions with ComEd, MISO, and PJM

Q. What interaction has ATC had with ComEd and PJM regarding the PLP-ZEC project?

A. We have been consulting with both ComEd and PJM for many months, and have been keeping them informed as to ATC's proposal. PJM conducted its own reliability tests to determine whether the addition of the PLP-ZEC line would cause reliability problems within PJM. PJM confirmed that it found no reliability issues related to the PLP-ZEC project.

ATC, ComEd, PJM, and MISO are parties to a transmission-to-transmission interconnection agreement filed with the FERC. This agreement describes and governs the points of interconnection between the two utilities and their two regional transmission

organizations. ATC has requested an additional point of interconnection with ComEd, which will be the PLP-ZEC line, with the new point of interconnection being at ComEd's 345-kV Zion Energy Center Substation. ATC and ComEd have entered into a Transmission Upgrade Agreement whereby ATC will pay, in advance, for the work necessary at ComEd's substation, subject to a post-construction true-up of costs.

The Cost of the Project

Q. What will the proposed project cost to construct?

A. For our work, we used the figure of $28,856,000 as the cost to build the project. Since the time our planning studies were complete, some additional work has been done by our engineering and project management teams on more precise construction estimates based on the actual routes chosen.

Q. Who will pay for the line construction?

A. ATC will pay for all construction, including work needed by ComEd, as I described above. The precise mechanism by which ATC will recover these costs through its FERC-jurisdictional rates is not completely certain at this point, although the method of cost recovery is not determinative of whether this project, with its demonstrated benefits, should be allowed to proceed. MISO has publicly stated that it is considering the PLP-ZEC project as a candidate for MISO-wide cost sharing as a Multi-Value Project (MVP) under the recently revised MISO tariff. However, it is also possible that the project will not qualify as an MVP project, or that the MISO tariff will ultimately be overturned, in which case ATC's transmission customers will bear the cost through rates. ATC intends to proceed with this project regardless of the rate treatment ultimately afforded it.

Q. Is ATC capable of financing the project without endangering its financial health?

A. Yes. ATC's annual capital spending on transmission projects ranges from $200-$400 million and we expect to spend approximately $3.8 - $4.4 billion in system upgrades over the next ten years (ATC 2011 Ten Year Assessment). This project represents only 10% of ATC's likely capital budget for 2013, when most of the costs will be incurred. The project poses no significant financial risk to ATC or its customers.

Summary and Conclusion

Q. Please summarize your conclusions and recommendations.

A. The construction of the PLP-ZEC transmission line produces significant economic benefits for Illinois customers in all six of the futures analyzed. This project will also improve the reliability of the transmission system even though it is not being proposed in response to a reliability need. No other transmission project is a preferred alternative to PLP-ZEC. As a result, ATC requests that the Illinois Commerce Commission authorize construction of the project.

Q. Does this complete your direct testimony?

A. Yes.

Planning Analysis of the Pleasant Prairie to Zion Energy Center 345-kV Transmission Project

Submitted to the Illinois Commerce Commission

Prepared By:
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October 3, 2011

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1.0 Executive Summary 5
2.0 Study Need 7
2.1 Regional Evaluation by the Midwest ISO 13
2.2 PJM Studies 19
2.3 Analysis of Illinois Needs by ATC 20
2.4 Local Economic Drivers 20
2.4.1 Energy Costs 21
2.4.2 Losses 21
2.5 Local and Statewide Reliability Benefits 21
2.6 Local Public-Policy Drivers 23
3.0 Transmission Project Descriptions 23
3.1 PLP-ZEC Transmission Project 23
3.2 Low Voltage Alternative 26
3.3 Alternatives Considered but Rejected 27
3.3.1 Bain to Zion Energy Center 345-kV Alternative 27
3.3.2 Racine to Zion Energy Center 345-kV Alternative 29
3.3.3 Loop in of the Arcadian to Zion 345-kV line to the Pleasant Prairie Substation 31
4.0 Introduction and Background to ATC's Planning Process 32
4.1 ATC's FERC Order 890 Open Stakeholder Process 32
4.2 ATC's Analysis of the Local Impacts of the Regional Market 33
4.3 ATC's Coordination with Regional Planning Activities 33
5.0 Local Economic Benefits 33
5.1 Summary of Methods and Results 34
5.2 Analytical Framework of the Economic Analysis 36
5.2.1 Strategic Flexibility Methodology 36
5.2.2 Key Variables or Drivers 36
5.2.3 Specific Futures 37
5.2.4 Descriptions of the Futures 37
5.2.5 Futures Matrices 41
5.3 Summary Value Measures Used in this Section 44
5.4 Specific Local Economic Benefits of PLP-ZEC 44
5.4.1 Benefit Definition 44
5.4.2 Summary of Measurement Methods 44
5.4.3 Energy-Cost Savings Results from PROMOD 45
5.4.4 Reserve Requirements 45
5.5 Summaries of Total PROMOD Economic Impacts (Annual Benefits and PV of Savings) 47
5.6 Transmission Alternatives 48
5.6.1 Comparing the Performance of Alternatives 48
5.7 Economic Benefits – Illinois 49
5.8 PROMOD Sensitivity – ComEd Transmission Upgrades 49
6.0 Reliability Analyses 50
6.1 Contingency Analysis 50
6.2 ATC Operational Assessment Analysis 54
6.3 Analyses conducted by PJM 56

6.4 Short Circuit Analyses 56
6.5 Loss Analyses 57
6.6 Stability Analyses 57
6.7 Transfer Capability Analyses 59
7.0 Local Public Policy Benefits 62
8.0 Regional Economic, Reliability and Public Policy Benefits 62
8.1 Strategic Midwest Area Renewable Transmission (SMARTransmission) Study .. 74
8.2 MISO – Regional Public Policy Benefits 77
9.0 The PLP-ZEC Project Integration with Future Transmission Facilities 79
10.0 Non-Transmission Alternatives 80
11.0 Total Comparison of Transmission Alternatives 81
12.0 Conclusions 84

1.0 Executive Summary

The transmission system of the Southeastern Wisconsin – Northeastern Illinois study area is in need of infrastructure improvement to enhance the market economic performance for the surrounding region. There has been chronic historical market congestion of thousands of hours each year and there is forecasted transmission congestion in the study area. The Pleasant Prairie to Zion Energy Center 345-kV project was developed to provide benefit to customers by relieving congestion in the study area, while allowing the most economic dispatch of generation and providing additional reliability related benefits.

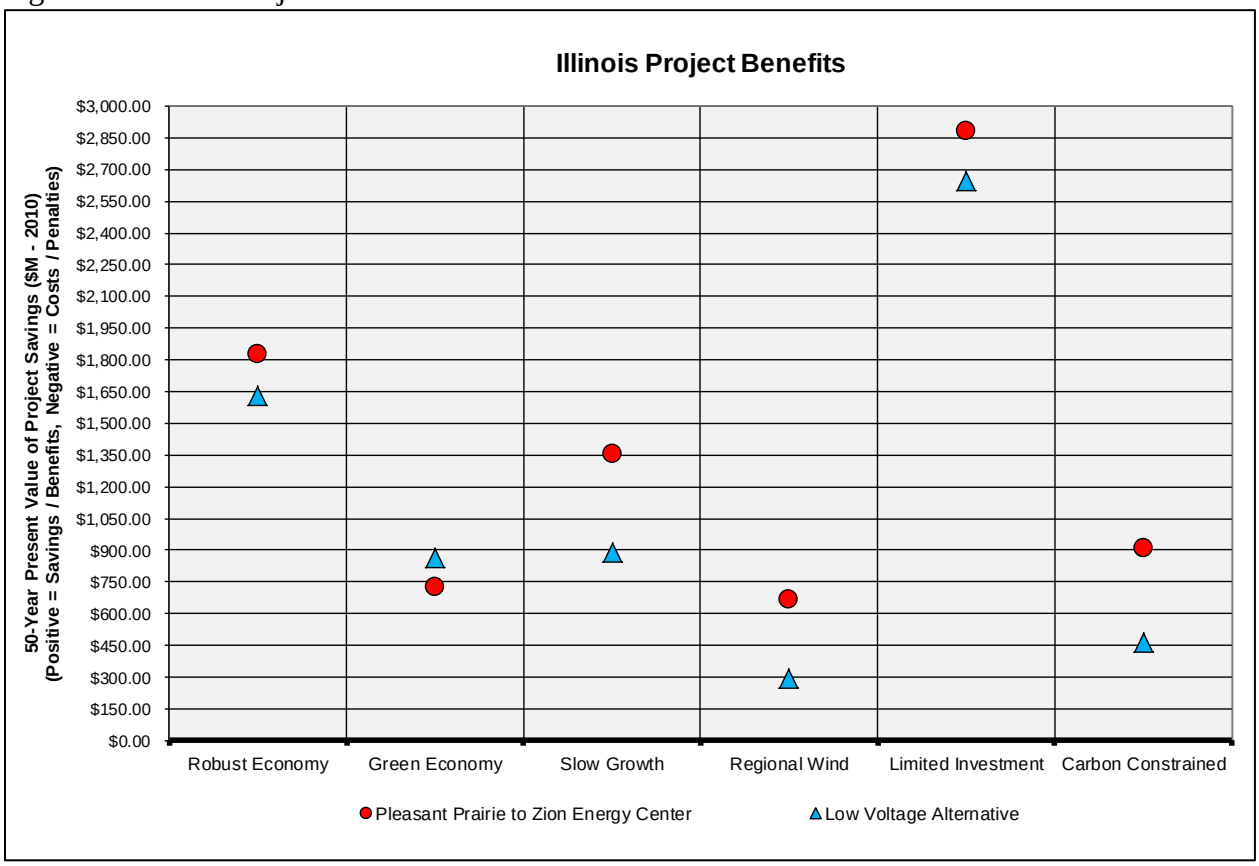
Although the transmission system in Southeastern Wisconsin and Northeastern Illinois is adequate with regard to NERC reliability standard compliance, the performance of the network is increasingly affected by regional transmission system flows of power primarily from the west to the east across the Eastern Interconnection. The transmission infrastructure was originally built to meet the generation to load requirements of the individual Transmission Owners. Over the years, the transmission system network and how it is used has changed significantly. With the increased load growth, the generation profile of the area has also changed. Efficient base load generating units were added in Southeastern Wisconsin and the Zion Nuclear units in Northeastern Illinois were decommissioned. As a result, congestion within the corridor has been identified in both the PJM and Midwest ISO (MISO) markets.

Over the economic project development process timeframe a number of project terminal endpoints were considered. A prescreening process was used to eliminate potential project alternatives. The two transmission project alternatives that were ultimately selected to be evaluated in detail are as follows:

- Pleasant Prairie to Zion Energy Center 345-kV: A 345-kV line from Pleasant Prairie, Wisconsin to Zion, Illinois (hereafter "PLP-ZEC").
- Low Voltage: Transmission upgrades consisting of upgrades to existing138-kV facilities located in Wisconsin and Illinois (hereafter "Low Voltage").

ATC calculated the local economic benefits of each transmission alternative over a range of six plausible futures. The Total Load Cost metric was used as the basis of determining value for Illinois customers. The PLP-ZEC project showed positive benefits for Illinois customers in all six of the futures analyzed over the 50 year economic life of the project. The Low Voltage Alternative also showed positive benefits in all six of the futures analyzed. However, the PLP-ZEC showed higher benefits than the Low Voltage Alternative in all but one of the futures. Figure 1 provides a graphical representation of the Illinois Project Benefits for both the PLP-ZEC project and the Low Voltage Alternative.

Figure 1: Illinois Project Benefits – Total Load Cost Metric



As a Candidate Multi-Value Project (MVP), the PLP-ZEC project would receive MISO MVP cost sharing from the MISO member companies. The importance of MISO MVP cost sharing is that Illinois ratepayers are currently estimated to pay not more than approximately 10% of the cost allocated across the MISO region if the PLP-ZEC project receives final MVP status. The MISO analysis is currently underway and is expected to be completed by the end of 2011. Based on this cost sharing assumption, the potential project costs of PLP-ZEC allocated to Illinois customers would be significantly less than the benefits shown in Figure 1 above. The Low Voltage Alternative is not considered eligible for MVP cost sharing and would therefore not have any expected cost impact to Illinois customers.

Although economic benefit is the focus of the justification, the project alternatives were also evaluated to determine associated reliability benefits. Each alternative provided different benefits depending upon the interconnection point.

The studies determined that the PLP-ZEC project would provide significant improvements to the generation angular stability margins and power transfer capability in Southeastern Wisconsin and Northeastern Illinois.

MISO has also identified the PLP-ZEC project as a Candidate MVP that will be compatible with potential transmission overlays developed. MISO is currently analyzing the PLP-ZEC project as part of the MVP portfolio. The preliminary analyses show that the PLP-ZEC project will work

well with future transmission expansion to provide benefits above and beyond those of PLP-ZEC alone.

Based on its analysis, ATC concludes that the PLP-ZEC project provides substantial net economic, and reliability benefits to the region. ATC therefore seeks approval for the necessary regulatory authorizations required to construct the PLP-ZEC project and place its facilities in service by the target date of March 31, 2014 at a capital project cost of $28,856,000[1].

It is anticipated that this report will be utilized in securing some of the required regulatory authorizations for this project; therefore, this report will remain as an interim or preliminary report during the ongoing state and regional review of this project.

[redacted]

[1] Project cost is based on latest estimates for PLP-ZEC Alternative #1 (Railroad Corridor) from ATC's Project Controls Office – dated June 16, 2011.

Pages 7-233

REDACTED

Contains Critical Energy Infrastructure Information (CEII) under 18 C.F.R. 388.113

And

FERC Standards of Conduct regulated information under 18 C.F.R. 358.1, *et seq.*

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Application of AMERICAN TRANSMISSION COMPANY LLC for a Certificate of Public Convenience and Necessity, pursuant to Section 8-406.1 of the Illinois Public Utilities Act, to construct, operate, and maintain a new 345,000 volt electric transmission line in Lake County, Illinois	:	No. 11-0661

Rebuttal Testimony of

Jamal Khudai

Manager of Economic Planning
American Transmission Company

Q. Please state your name and business address.

A. My name is Jamal Khudai. My business address is W234 N2000 Ridgeview Parkway Court, Waukesha, Wisconsin.

Q. In his direct testimony, ICC Staff Ex. 1.0, Mr. Rockrohr states that the Pleasant Prairie to Zion Energy Center transmission line has been under consideration by the Midwest Independent Transmission System Operator, or MISO. I refer specifically to page 8, lines 165 through 169, and page 12, lines 251 through 256. Do you have any update on the status?

A. Yes. At a meeting of its Board of Directors on December 8, 2011, MISO approved the 2011 Midwest Transmission Expansion Plan, or MTEP 2011. The Pleasant Prairie to Zion Energy Center transmission line was approved for inclusion in Appendix A of MTEP 2011, which means American Transmission Company is obligated to use its best efforts to construct the project. Attached as ATC Exhibit 5.1 is the approved Appendix A. The proposed project appears at the top of the second page.

Q. Does this complete your rebuttal testimony?

A. Yes.

Appendix A.4: MTEP11 New Appendix A Projects

Planning Region	Geographic Location by TO Member System	PrjID	Project Name	Project Description	States	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)
Central	AmerenIL	2239	Proposed MVP Portfolio 1 - Sidney to Rising 345 kV line	Sidney to Rising 345 kV line, plus 345 kV ring bus at Rising and breaker-and-a-half arrangement at Sidney.	IL	MVP	Shared		$83,230,000	11/15/2016
Central	AmerenIL	3017	Proposed MVP Portfolio 1 - Palmyra Tap-Quincy-Meredosia - Ipava & Meredosia-Pawnee 345 kV Line	Palmyra Tap to Quincy to Meredosia to Ipava 345 line and Meredosia to Pawnee 345 kV line. Install additional transformers at Quincy, Meredosia and Pawnee. 345 kV ring bus at Quincy, Meredosia, and Ipava, with breaker-and-a-half arrangement at Pawnee and Palmyra Tap Substations.	IL	MVP	Shared		$432,160,000	11/15/2017
Central	AmerenIL	3169	Proposed MVP Portfolio 1 - Pawnee to Pana - 345 kV Line	Pawnee to Pana 345 kV, 31 mile line including additional transformer at Pana	IL	MVP	Shared		$99,360,000	11/15/2018
Central	AmerenIL, DEM	2237	Proposed MVP Portfolio 1 - Pana - Mt. Zion - Kansas - Sugar Creek 345 kV line	Pana to Mt. Zion to Kansas to Sugar Creek 345 kV line. Install transformers at Mt. Zion and Kansas, with 345 kV ring bus at Mt. Zion and breaker-and-a-half arrangement at Kansas and Pana.	IL	MVP	Shared		$318,410,000	11/15/2019
Central	AmerenIL, MEC	3022	Proposed MVP Portfolio 1 - Fargo-Galesburg-Oak Grove 345 kV Line	Fargo-Galesburg-Oak Grove (MEC) 345 kV Line - New 70 mile, 3000 A summer emergency capability line. 345 kV ring bus at Fargo.	IA, IL	MVP	Shared		$272,249,969	11/15/2019
Central	AmerenMO	3170	Proposed MVP Portfolio 1 - Adair-Palmyra Tap 345 kV Line	Adair - Palmyra 345 kV, 58 miles of line; Establish Palmyra Tap Substation	MO	MVP	Shared		$112,790,000	11/15/2020
Central	AmerenMO, ITCM	2248	Proposed MVP Portfolio 1 - Adair - Ottumwa 345	Adair Substation - New 560 MVA, 345/161 kV Transformer. New 71 mile 345 kV line from Adair to Ottumwa with 3000 A summer emergency capability. 345 kV ring bus at West Adair	IA, MO	MVP	Shared		$244,627,764	11/15/2020
Central	DEM, NIPS	2202	Proposed MVP Portfolio 1 - Reynolds to Greentown 765 kV line	Reynolds to Greentown 765 kV line	IN	MVP	Shared		$186,875,000	8/1/2018
East	NIPS	3203	Proposed MVP Portfolio 1 - Reynolds to Burr Oak to Hiple 345 kV	Reynolds to Burr Oak to Hiple 345 kV line and tie in second AEP 345 kV circuits at Reynolds and Hiple	IN	MVP	Shared		$271,000,000	12/31/2019

Planning Region	Geographic Location by TO Member System	PrjID	Project Name	Project Description	States	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)
West	ATC LLC	2844	Proposed MVP Portfolio 1 - Pleasant Prairie-Zion Energy Center 345 kV line	Construct a new Pleasant Prairie-Zion Energy Center 345-kV line	WI/IL	MVP	Shared		$28,856,000	3/16/2014
West	ATC LLC, XEL, ITCM	3127	Proposed MVP Portfolio 1 - N LaCrosse-N Madison-Cardinal - Spring Green - Dubuque area 345-kV	N LaCrosse- N Madison - Cardinal 345-kV & Dubuque County - Spring Green - Cardinal 345 kV line. Spring Green and Briggs Road transformers	WI, IA	MVP	Shared		$679,260,000	12/31/2020
West	MEC, ITCM	3205	Proposed MVP Portfolio 1: Lakefield Jct. - Winnebago - Winco - Burt area & Sheldon - Burt Area - Webster 345 kV line	New 345 kV line from Lakefield Junction to Burt via Winnebago and Winco and a new 345 kV line from Sheldon to Webster via Burt. Includes 161 kV rebuild as underbuild along portions of the route.	MN, IA	MVP	Shared		$514,069,787	12/1/2016
West	MEC, ITCM	3213	Proposed MVP Portfolio 1 - Winco to Hazelton 345 kV line	Winco to Lime Creek to Floyd to Blackhawk to Hazelton 345 kV line and Lime Creek, Floyd and Black Hawk transformers	IA	MVP	Shared		$591,551,532	12/31/2015
West	OTP, MDU	2220	Proposed MVP Portfolio 1 - Ellendale to Big Stone South	Big Stone to Ellendale 345 kV double circuit line	ND, SD	MVP	Shared		$326,164,000	12/31/2019
West	OTP, XEL	2221	Proposed MVP Portfolio 1 - Big Stone South to Brookings	Brookings to Big Stone 345 kV double circuit	SD	MVP	Shared		$226,720,000	12/31/2017
West	XEL, GRE	1203	Proposed MVP Portfolio 1 - Brookings, SD - SE Twin Cities 345 kV	Brookings Cty-Lyon Cty (Single Ckt 345 kV); Lyon Cty-Cedar Mountain-Helena (Double Ckt 345 kV); Helena-Lake Marion-Hampton Corner (Single Ckt 345 kV); Lyon Cty-Hazel (Single Ckt 345 kV); Hazel-Minnesota Valley (Single Ckt 345 kV, initially operate at 230 kV); Cedar Mountain-Franklin (Single Ckt 115 kV)	MN, SD	MVP	Shared		$738,400,000	2/16/2015
Central	AmerenIL	2065	Stallings 345/138 kV Sub - Replace 560 MVA 345/138 kV transformer	Stallings 345/138 kV Substation-Replace 560 MVA, 345/138 kV Transformer with 700 MVA unit. Install a 345kV ring bus	IL	BaseRel	Shared		$10,075,000	6/1/2012

Planning Region	Geographic Location by TO Member System	PrjID	Project Name	Project Description	States	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)
Central	AmerenIL	2980	Tazewell-San Jose Rail - Reconductoring	Tazewell-San Jose Rail Substation section of East Springfield-Tazewell-1384 138 kV Line - Reconductor 3.67 miles of 927 kcmil ACAR conductor at the Tazewell end of the line with conductor capable of carrying at least 1278 A under summer emergency conditions	IL	BaseRel	Not Shared		$3,251,000	6/1/2013
Central	AmerenIL	2981	McLean-Oglesby 138 kV Reconductor	Replace 9.72 miles of 138 kV line on L1382, from McLean County Substation to El Paso Tap to a minimum 1200A SE capability	IL	BaseRel	Not Shared		$5,100,000	9/1/2013
Central	AmerenMO	2306	Nortwest Cape Area 345/161 kV Substation	Install 560 MVA, 345/161 kV Transformer. Provide 345 kV supply from 11 mile 345 kV line extension from Lutesville Substation	MO	BaseRel	Shared		$30,751,000	6/1/2016
East	ITC	2931	Adams-Spokane/Burns1-Jewel 120 kV Rebuild	Rebuild 2.4 miles of DC 3/0 Cu 120 kV lin to 1431 ACSR 230 kV construction.	MI	BaseRel	Not Shared		$3,200,000	6/30/2012
East	ITC	3285	Fermi & Shoal 120kV Capacitors	33.3 Mvar Capacitors at Fermi and Shoal 120kV	Mi	BaseRel	Not Shared		$3,800,000	6/1/2014
East	METC	1809	Keystone-Hodenpyl 138 kV Rebuild	Rebuild the 27 mile Keystone to Hodenpyl 138 kV line to 954 ACSR (Pre-build to 230 kV construction).	Mi	BaseRel	Shared		$32,600,000	12/31/2013
East	METC	2812	Twining - Alcona 138kV Rebuild	Rebuild the Twining-Mio 138kV 38 mile line to 954 ACSR future-double-circuit (pre-built to 230kV)	MI	BaseRel	Shared		$43,300,000	5/31/2012
East	METC	3303	Cottage Grove-East Tawas 138 kV Rebuild	Rebuild 12.3 miles of 138 kV line	MI	BaseRel	Shared		$11,400,000	6/1/2015
East	METC	3304	Croton-Nineteen Mile 138 kV Rebuild	Rebuild 21.5 miles of 138 kV 110 CU to 954 ACSR (Pre-build to 230 kV construction).	Mi	BaseRel	Shared		$26,600,000	12/31/2013
East	METC	3520	NERC Alert Facility Ratings for 2011: Eureka - Vestaburg 138 kV line upgrade	Eureka - Vestaburg 138 kV line upgrade: Remediate sag limits to conductor rating of circuit	Mi	BaseRel	Not Shared		$1,100,000	6/1/2012
East	METC	3521	NERC Alert Facility Ratings for 2011: Bullock - Summerton 138 kV line upgrade	Bullock - Summerton 138 kV line upgrade: Remediate sag limits to conductor rating of circuit	Mi	BaseRel	Not Shared		$3,600,000	6/1/2012
West	ATC LLC	1729	Uprate Straits-McGulpin 138 kV	Uprate overhead portions of Straits-McGulpin 138-kV circuits #1 & #3 to 200 F degree summer emergency ratings	MI	BaseRel	Not Shared		$300,000	4/20/2011

Planning Region	Geographic Location by TO Member System	PrjID	Project Name	Project Description	States	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)
West	ATC LLC	1950	2nd Kewaunee 345-138 kV Transformer	Reconfigure Kewaunee 345/138 kV switchyard and install a 2nd Kewaunee 345-138 kV transformer of 500 MVA.	WI	BaseRel	Shared		$17,697,000	3/17/2011
West	ATC LLC	2800	Uprate Arpin-Hume 115-kV	Marshfield Electric & Water Department project to increase ground clearance to operate the line at 200 Deg F	WI	BaseRel	Not Shared		$191,000	9/10/2010
West	ATC LLC	2846	Straits power flow control	Install AC-DC-AC Back to Back Voltage Source Converterpower (VSC) flow controller at the Straits 138-kV substation	MI	BaseRel	Shared		$90,000,000	5/1/2014
West	ATC LLC	3427	Nordic-Perch Lk Uprate (AM)	Increase ground clearance for the Nordic-Perch Lk 138 kV line	MI	BaseRel	Not Shared		$1,543,040	3/7/2011
West	ATC LLC	3459	A-157 Hume-Wildwood 115kV Uprate	Increase ground clearance on the Hume-Wildwood 115kV line	WI	BaseRel	Not Shared		$50,000	4/12/2011
West	ATC LLC	3461	N-144 McMillan-Wildwood 115kV Uprate	Increase ground clearance on the McMillan-Wildwood 115kV line	WI	BaseRel	Not Shared		$50,000	2/28/2011
West	DPC	3397	Genoa to La Crosse Tap 161 Rebuild	Rebuild of the 161 kV line from Genoa to the La Crosse tap.	WI	BaseRel	Shared		$18,000,000	6/1/2014
West	GRE/MP	2634	Savanna-Cromwell	Savanna-Cromwell	MN	BaseRel	Shared		$30,000,225	12/1/2014
West	ITCM	3410	Bridgeport Terminal Upgrades	Upgrade the Bridgeport-Ottumwa 161kV terminal equipment	IA	BaseRel	Not Shared		$200,000	12/31/2011
West	ITCM	3415	Marion Termianl Upgrades	Uprate 115 kV breaker 3710 terminal equipment at Marion.	IA	BaseRel	Not Shared		$10,000	12/31/2011
West	ITCM	3499	NERC Alert Facility Ratings for 2011	Verify and remediate facilities as required due to the industry-wide NERC alert	IA	BaseRel	Not Shared			12/31/2011
West	MEC	3268	Lehigh: 345 kV 50 MVAr Reactor	Add a 345 kV, 50 MVAr reactor	IA	BaseRel	Not Shared		$2,750,000	11/1/2012
West	MP	3373	9 Line	Thermal Upgrade	MN	BaseRel	Shared		$8,000,000	12/30/2012
West	OTP	3481	Buffalo - Casselton 115 kV Line	Construct 16 mile 115 kV line from Buffalo - Casselton (ND); Replace Buffalo 345/115 kV Transformer; Rebuild portion of Sheyenne - Mapleton 115 kV Line	ND	BaseRel	Shared		$14,000,000	12/31/2014
West	XEL	3309	Buffalo Ridge Substation Equipment Upgrade	Upgrade the wave traps and line switches at Buffalo Ridge to 2000 A going to Lake Yankton and Pipestone. Retap the Pipestone CTs to 2000 A going to Buffalo Ridge.	MN	BaseRel	Not Shared		$286,000	8/1/2011
West	XEL	3312	Minn Valley - Maynard - Kerkhoven tap upgrade	This project is to upgrade the Minn Valley - Maynard - Kerkhoven tap 115 kV line to 795 ACSS conductor	MN	BaseRel	Shared		$13,660,000	6/1/2014

Planning Region	Geographic Location by TO Member System	PrjID	Project Name	Project Description	States	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)
West	XEL	3314	Kohlman Lake - Long Lake 2nd circuit	This project is to convert the Kohlman Lake - Long Lake 115 kV bifurcated line to double circuit with separate line terminations at Kohlman Lake and Long Lake	MN	BaseRel	Not Shared		$3,000,000	6/1/2014
West	XEL	3315	Chisago County 2nd 345/115 kV transformer	This project is to install a 2nd 345/115 kV transformer at Chisago County	MN	BaseRel	Not Shared		$7,000,000	6/1/2014
West	XEL	3316	Riverside - Apache lie upgrade	This project is to upgrade Riverside - Apache line to 360 MVA and upgrade Apache switch to 2000A	MN	BaseRel	Not Shared		$3,000,000	6/1/2014
West	XEL	3317	Goose Lake - Kohlman Lake 2nd circuit	This project is to convert the single circuit line between Goose Lake and Kohlman Lake to double circuit.	MN	BaseRel	Shared		$6,000,000	6/1/2014
West	XEL	3318	Parkers Lake Overstressed Breakers	This project replaces some of the 115 kV breakers at Parkers Lake with 63 kA rated breakers	MN	BaseRel	Not Shared		$1,900,000	10/1/2011
West	XEL	3319	Split Rock Overstressed Breakers	This project replaces some of the 115 kV breakers at Split Rock with 63 kA rated breakers	SD	BaseRel	Not Shared		$1,344,000	12/1/2011
West	XEL	3320	Split Rock Reactor Replacement	This project is needed to replace the failed 50 MVAR reactor and associated breaker.	SD	BaseRel	Not Shared		$100,000	12/1/2011
West	XEL	3321	Chemolite Breaker Addition	This project adds two breakers at Chemolite to insure only one line at a time will be removed from service during a breaker failure.	MN	BaseRel	Not Shared		$580,000	1/14/2011
West	XEL	3326	Black Dog Outlet	This line will rebuild the 115 kV line from Black Dog to Savage to 795 ACSS conductor.	MN	BaseRel	Not Shared		$4,564,000	6/1/2012
West	XEL	3475	Prairie 3rd transformer	This project is to install a 3rd 230/115 kV transformer at Prairie substation	ND	BaseRel	Not Shared		$12,000,000	6/1/2014
West	XEL	3476	Maple River - Cass County 345 kV line	This project is to build a new 4.5 mile 345 kV line from Maple River to Cass County substation along with the 345/115 kV transformer at Cass County substation.	ND	BaseRel	Not Shared		$13,226,000	6/1/2014
Central	AmerenIL	3337	G931 Paxton-Gilman Reconductoring	Reconductor to 1200 A summer emergency capability	IL	GIP	Not Shared		$7,390,000	12/1/2013
Central	AmerenIL	3357	Hennepin-E. Kewanee L1552 - Increase Ground Clearance	G545 and G569 Increase ground clearance on 477 kcmil ACSR conductor to permit operation at 120 degrees C. Upgrade E. Kewanee breaker and terminal equipment to 1200 A capability	IL	GIP	Not Shared		$3,180,000	12/31/2012
Central	AmerenIL	3358	G545 Generator connection and bus rearrangement - E. Kewanee	Rearrange 138 kV bus at E. Kewanee and install terminal equipment (including 1200 A breaker) to connect wind farm (G545)	IL	GIP	Not Shared		$1,501,000	10/15/2012

Planning Region	Geographic Location by TO Member System	PrjID	Project Name	Project Description	States	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)
Central	AmerenIL	3359	G569 Generator connection and bus upgrade - E. Galesburg	Upgrade 138 kV bus at E. Galesburg and install terminal equipment, including 1200 A breaker, to facilitate connection of wind farm (G569).	IL	GIP	Not Shared		$834,000	10/1/2012
Central	AmerenIL	3360	G931 Generator connection and Establishment of Sheldon Soth Switching Station	Construct a new 138 kV switching station to connect a new wind farm (G931) to the Watseka-Morrison Ditch-1 138 kV line. Upgrade relaying at Watseka terminal.	IL	GIP	Not Shared		$4,425,000	5/6/2011
Central	AmerenIL	3361	G996 Generator connection and bus upgrade - Paxton, South	Install terminal equipment, including 2000 A breaker, to facilitate connection of wind farm (G996). Install 2000 A bus-tie breaker	IL	GIP	Not Shared		$1,512,200	7/26/2011
Central	DEM	3387	Tri-County Wind Energy 230kV Station - DPP J028	J028 - 230kV - Gen. interconnect sub - install three brkr ring bus for 200MW wind farm between Attica and Lafayette in the 23027 ckt.	IN	GIP	Not Shared		$3,778,246	6/1/2013
East	ITC	3516	J025-Macomb County LF Gas Gen. Facility	12.8 MW LF Gas Gen. tapping the Carbon Tap on the 120kV Jewell - St. Clair 120kV line.	MI	GIP	Shared		$485,000	9/1/2011
East	METC	3517	G905-Gratiot County Wind Generation	200 MW wind farm connecting at the new METC owned Redstone substation	MI	GIP	Shared		$21,630,500	12/31/2012
East	METC	3518	G809-MCV	190 MW increase of the existing MCV Co-generation plant	MI	GIP	Shared		$64,000	6/1/2012
West	ATC LLC	1143	G282, 37628-02	Net: rating of HILLMAN 138/69 kV TRANSFORMER 1 is upgraded to 100 MVA. Int: The Generator is required to provide a 138/34.5kV transformer, a circuit breaker and a disconnect switch on the high side of the 138/34.5kV transformer and 34.5kV facilities to c	WI	GIP	Not Shared		$4,200,000	12/31/2012
West	ATC LLC	3160	G706-H012 Line X-6 Portage-Hamilton-Staff-Friesland-North Randolph 138 kV Uprate	G706-H012 Line X-6 Portage-Hamilton-Staff-Friesland-North Randolph 138 kV Uprate	WI	GIP	Not Shared		$1,447,679	12/31/2011
West	ATC LLC	3161	G749 EcoMont Wind Farm	New EcoMont substation tapped into Belmont Tap-Rewey Tap 69 kV Line for G749	WI	GIP	Not Shared		$4,569,183	11/30/2012

Planning Region	Geographic Location by TO Member System	PrjID	Project Name	Project Description	States	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)
West	ATC LLC	3206	G833-4_J022-3 Long Term Solution	1) Construct a new Barnhart 345 & 138 kV substation 2) Install a new 345/138 kV transformer at Barnhart 3) Loop Edgewater-South Fond du Lac, Edgewater-Cedarsauk, Sheboygan Energy Center-Granville 345 kV lines into Barnhart 4) Loop the South Sheboygan Falls-Mullet River 138 kV line into Barnhart 138 kV 5) Construct a new 138 kV line from Barnhart to Plymouth #4 6) Construct a new 138 kV line from Plymouth #4 to Howards Grove 7) Construct a new 138 kV line from Howards Grove to Erdman 8) Convert the existing Forest Junction-Howards Grove-Plymouth #4 138 kV line and the northern portion of the existing Plymouth #4-Holland 138 kV line to 345 kV 9) Terminate the not-converted Holland 138 kV line at Barnhart 138 kV 10) Terminate the southern end of the converted 345 kV line at Barnhart 11) Construct a new Branch River 345 kV substation 12) Loop the converted 345 kV line into Branch River 345 kV substation 13) Loop the Point Beach-Forest Juction, Point Beach-Sheboygan Energy Center 345 kV lines into Branch River 14) Uprate Barnhart-Cedarsauk 345 kV line to 960 MVA for	WI	GIP	Shared		$173,309,000	6/1/2018
West	ATC LLC	3457	GIC J060 Garden City Wind Phase I	Interconnect GIC J060 Garden City Wind	MI	GIP	Not Shared		$4,779,758	12/30/2011
West	GRE	3467	MISO G604	Connect Oak Glen Wind Farm to 69 kV system	MN	GIP	Not Shared		$1,722,464	7/1/2011
West	GRE	3468	MISO H062	Connect H062 Wind Generation	MN	GIP	Not Shared		$1,312,741	9/1/2011
West	GRE	3469	MISO H061	Connect H061 Wind generation	MN	GIP	Not Shared		$192,530	10/1/2011
West	ITCM	3191	G164-Lakefield Jct 345 kV Breaker & Half	Convert the Lakefield 345kV ring bus to breaker and a half.	MN	GIP	Shared		$8,148,000	4/29/2011

Planning Region	Geographic Location by TO Member System	PrjID	Project Name	Project Description	States	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)
West	ITCM	3192	G604-Ellendale 69 kV Switch Station	Construct a new Ellendale 69kV four terminal breaker station. The Hayward-West Owatanna 69kV line will be rerouted into the Ellendale breaker station. Then change the N.O. point on the line to closed.	MN	GIP	Shared		$1,913,706	12/31/2011
West	ITCM	3193	G741-Martin Co Waste Heat	Construct a new 69kV tap to the G741 customer. Tap the Trimont (IPL)-Sherburn(SCREC) 69kV line.	MN	GIP	Shared		$223,884	10/1/2010
West	ITCM	3194	G798-Story County Upgrades	Expand the ring bus at Story County.	IA	GIP	Shared		$422,664	7/31/2010
West	ITCM	3195	G870-Freeborn	Tap the Hayward-Winnebago Jct 161kV and construct a new Freeborn 161kV three terminal breaker station. Approximately 4 mile tap will connect Freeborn to the new G870 customer substation.	MN	GIP	Shared		$3,516,163	10/1/2010
West	ITCM	3196	H007-Bond Breaker Station	Tap the Hayward-Winnebago Jct 161kV and construct a new Bond 69kV three terminal breaker station.	IA	GIP	Shared		$3,560,163	7/1/2011
West	MDU	3199	G359, 38073-01	230 kV line from project interconnection to Ellendale Jct substation and new 230/115 kV transformer at Ellendale	ND	GIP	Not Shared		$19,130,000	12/1/2011
West	OTP	3466	Project J-035 5 MW Wind Farm on OTP Doran 41.6 kV line.	Add 3 Way Switch on 41.6 kV line between Doran 41.6 kV substation to Doran Jct.	MN	GIP	Not Shared		$140,000	8/1/2012
Central	AmerenIL	3370	Oreana Substation - Add 138-69 kV Transformer	To accommodate the installation of a new 138-69 kV transformer at Oreana, install 1-2000 A breaker and 2-2000 A disconnect switches to expand ring bus. Install 138 kV, 600 A motor operated disconnect switch at high-side of new 138-69 kV transformer.	IL	Other	Not Shared	Condition	$750,000	6/1/2012
Central	AmerenMO	3355	Labadie Breaker Replacements	Replace Breakers on Bland and Montgomery line positions with 3000 A, 50 kA breakers	MO	Other	Not Shared	Reliability	$2,610,000	12/31/2011
Central	AmerenMO	3368	Bailey Substation	Install 2-2000 A bus-tie breakers and 2-138 kV circuit switchers	MO	Other	Not Shared	Reliability	$4,000,000	6/1/2012
Central	DEM	3377	Scottsburg 69kV - 28.8MVAR Capacitor	Replace Scottsburg 69kV - 7.2Mvar capacitor with a 28.8 Mvar capacitor and upgrade 69kV capacitor switching equipment	IN	Other	Not Shared	Reliability	$500,000	12/31/2015
Central	DEM	3378	Canal 69kV Dist Sub	Canal Sub - Purchase land and build 22.4MVA, 69/12kV sub near Canal Road and Allison Street in the 5762 ckt.	OH	Other	Not Shared	Reliability	$756,196	6/1/2012
Central	DEM	3379	Shelbyville McKay Rd. 69kV Dist Sub	Shelbyville McKay Rd. - add new 69/12kV distribution sub in the 6976 ckt. Loop through with 954acsr and a set of 1200A line switches.	IN	Other	Not Shared	Reliability	$303,710	6/1/2014

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Central	DEM	3380	Noblesville Sta. 138kV Brkrs and 345kV Ckt Sws	Noblesville Gen. Sta. - Replace 138KV OB OCB: 138TR, 13869-9, 138230-7, 13886 and Circuit Switchers: 345230-11, 34519.	IN	Other	Not Shared	Condition	$2,909,606	12/31/2011
Central	DEM	3383	H.E. Rocklane Alternate 69kV Feed	Ckt. 6999 new Sherman Rd. Jct. to H.E. Rocklane line section. Replace DEM 69kV poles to accommodate new H.E. tap line. This will be an alternate feed to Rocklane - operated N.O. - built and owned by HE, inside DEM area.	IN	Other	Not Shared	Reliability	$64,568	2/6/2011
Central	DEM	3384	Hortonville to Marathon Jct. 69kV Reconductor	Hortonville to Marathon Jct. section of ckt. 6917 - Replace 336ACSR and 477ACSR with 954ACSS@200C. Upgrade Marathon Jct 600A switches to 1200A.	IN	Other	Not Shared	Reliability	$1,409,099	12/1/2012
Central	DEM	3385	Carmel Homeplace to Springmill Jct 69kV Reconductor	Carmel Homeplace to Springmill Jct. section of ckt. 69155 - Reconductor with 954ACSS@200C	IN	Other	Not Shared	Reliability	$1,691,315	12/31/2012
Central	DEM	3386	Carmel Springmill Rd. to Hortonville 69kV Line and Brkrs	Carmel Springmill Rd. Sub - Add 3-69kV breakers in straight bus config and build new .23 mile 69kV 954ACSS@200C line from Springmill Sub to old Springmill Jct. to complete circuit to Hortonville. Change operating mode at Homeplace to close loop from 146th to Springmill.	IN	Other	Not Shared	Reliability	$3,000,000	6/1/2016
Central	DEM	3388	Walton to Logansport S. 69kV Reconductor	Walton to Logansport S. - Reconductor 69kV - 69110 line with 477acsr at 100C	IN	Other	Not Shared	Reliability	$1,900,000	6/1/2015
Central	DEM	3389	WVPA Center Valley 138kV Dist Sub	DEM to install new line switching in the 138kV - 13867 ckt. at intersection with SR39 for tap line to radially feed new WVPA Center Valley dist sub	IN	Other	Not Shared	Reliability	$236,677	12/1/2011
Central	DEM	3390	Inland Container to Hillsdale 69kV Line Rebuild	Rebuild 69kV - 6906 line from Inland Container to WROW Jct. to Hillsdale - 477acsr26x7 at 100C	IN	Other	Not Shared	Condition	$3,663,434	12/31/2011
Central	DEM	3391	Elnora to Newberry 69kV Line Rebuild	Rebuild 69kV - 6959 line section from Elnora to Newberry - 477acsr26x7 at 100C	IN	Other	Not Shared	Condition	$1,716,818	12/31/2011
Central	DEM	3392	DEM Speed to LGEE Paddys West 345kV tie	New DEM Speed to LGEE Paddys West 345kV tie line	IN	Other	Not Shared	Reliability	$15,000,000	12/31/2012
Central	IPL	3273	Southwest - Stout CT Line Rating Upgrade	Increase line rating above 322 MVA to mitigate the potential overload	IN	Other	Not Shared	Reliability	$300,000	6/1/2011
Central	IPL	3274	South - Stout S Line Rating Upgrade	Increase line rating above 272 MVA to mitigate the potential overload	IN	Other	Not Shared	Reliability	$350,000	6/1/2011
Central	Vectren (SIGE)	2460	Leonard Rd 69kV Substation	Add new 69kV switching substation near Leonard Rd	IN	Other	Not Shared	Reliability	$2,150,000	6/1/2013
Central	Vectren (SIGE)	2462	Y53 Stringtown to Folz Reconductor	Reconductor existing 69kV line for more capacity	IN	Other	Not Shared	Condition	$2,500,000	6/1/2013

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Central	Vectren (SIGE)	2463	Y31 Mt Vernon to Givens 69kV recond.	Reconductor existing 69kV line for more capacity	IN	Other	Not Shared	Condition	$5,700,000	6/1/2013
Central	Vectren (SIGE)	2464	Y33 Mt Vernon to New Harmony 69kV recond.	Reconductor existing 69kV line for more capacity	IN	Other	Not Shared	Condition	$10,600,000	6/1/2014
East	ITC	1868	Cato GIS replacement	Replace GIS Equipment	MI	Other	Not Shared	Condition	$5,400,000	12/1/2012
East	ITC	3276	ITCT Annual Breaker Replacement Program for 2013	Annual Breaker Replacement Program	Mi	Other	Not Shared	Condition	$9,000,000	12/31/2013
East	ITC	3277	ITCT Annual NERC Relay Loadability Compliance Program for 2013	Annual NERC Relay Loadability Program	Mi	Other	Not Shared	Reliability	$2,400,000	12/31/2013
East	ITC	3278	ITCT Annual Potential Device Replacement Program for 2013	Annual Potential Device Replacement Program	Mi	Other	Not Shared	Condition	$300,000	12/31/2013
East	ITC	3279	ITCT Annual Relay Betterment Program for 2013	Annual Relay Betterment Program	Mi	Other	Not Shared	Condition	$1,800,000	12/31/2013
East	ITC	3280	ITCT Annual Wood Pole Replacement Program for 2013	Annual Wood Pole Replacement Program	Mi	Other	Not Shared	Condition	$3,000,000	12/31/2013
East	ITC	3281	Lima Substation	Distribution Interconnection Request	Mi	Other	Not Shared	Distribution	$8,400,000	12/31/2012
East	ITC	3283	Dexter Township Substation	Distribution Interconnection Request	Mi	Other	Not Shared	Distribution	$2,676,000	11/1/2012
East	ITC	3284	ITCT Customer Interconnections - Year 2015	Distribution Interconnection Request	Mi	Other	Not Shared	Distribution	$2,000,000	12/31/2015
East	ITC	3286	Fermi 345kV Disconnect Replacement Project - 3rd Row	Replace 345kV Disconnects, add 3rd 345kV Row	Mi	Other	Not Shared	Condition	$5,050,000	12/31/2013
East	ITC	3495	NERC Alert Facility Ratings for 2011	Verify and remediate facilities as required due to the industry-wide NERC alert	MI	Other	Not Shared	Reliability	$1,700,000	12/31/2011

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East	ITC	3503	Air Flow Spoilers Installation	Install air flow spoilers on approximately 15 miles of the targeted areas of the Belle River-Greenwood-Pontiac and Belle River-Blackfoot 345 kV double circuit tower lines.	MI	Other	Not Shared	Reliability	$1,620,000	12/31/2012
East	METC	3139	Tippy-Wexford 138 kV Circuit Uprgrade	Terminal Equipment upgrade at Tippy	MI	Other	Not Shared	Reliability	$20,000	6/1/2012
East	METC	3287	Riggsville Rebuild	Rebuild 138 kV bus and switches	Mi	Other	Not Shared	Condition	$4,600,000	9/30/2011
East	METC	3288	METC Annual Breaker Replacement Program for 2013	Annual Breaker Replacement Program	Mi	Other	Not Shared	Condition	$6,000,000	12/31/2013
East	METC	3289	METC Annual NERC Relay Loadability Compliance Program for 2013	Annual NERC Relay Loadability Program	Mi	Other	Not Shared	Reliability	$2,400,000	12/31/2013
East	METC	3290	METC Annual Potential Device Replacement Program for 2013	Annual Potential Device Replacement Program	Mi	Other	Not Shared	Condition	$300,000	12/31/2013
East	METC	3291	METC Annual Relay Betterment Program for 2013	Annual Relay Betterment Program	Mi	Other	Not Shared	Condition	$1,200,000	12/31/2013
East	METC	3292	METC Annual Wood Pole Replacement Program for 2013	Annual Wood Pole Replacement Program	Mi	Other	Not Shared	Condition	$4,800,000	12/31/2013
East	METC	3293	METC Annual Battery Replacement Program for 2013	Annual Battery Replacement Program	Mi	Other	Not Shared	Condition	$100,000	12/31/2013
East	METC	3294	METC Annual Power Plant Control Relocation Program for 2013	Annual Power Plant Control Relocation Program	Mi	Other	Not Shared	Operation	$3,120,000	12/31/2013
East	METC	3295	METC Sag Clearance Program for 2013	Sag Clearance Program	Mi	Other	Not Shared	Clearance	$3,600,000	12/31/2013
East	METC	3296	METC Spill Prevention Control and Countermeasure Program for 2011	Annual SPCC Program	Mi	Other	Not Shared	Condition	$3,100,000	12/31/2011

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East	METC	3297	METC Spill Prevention Control and Countermeasure Program for 2012	Annual SPCC Program	Mi	Other	Not Shared	Condition	$3,100,000	12/31/2012
East	METC	3298	METC Spill Prevention Control and Countermeasure Program for 2013	Annual SPCC Program	Mi	Other	Not Shared	Condition	$3,100,000	12/31/2013
East	METC	3299	METC Customer Interconnections - Year 2015	Distribution Interconnection Request	Mi	Other	Not Shared	Distribution	$2,500,000	12/31/2015
East	METC	3306	Karn-Cottage Grove 138 (Karn Position 488) Relay Replacement Project		Mi	Other	Not Shared	Reliability	$200,000	6/1/2012
East	METC	3308	Livingston to Gaylord 138 kV Dual Pilot Relay Protection Scheme Installation	Install new dual pilot relay scheme on 138kV circuit	Mi	Other	Not Shared	Reliability	$315,000	12/31/2012
East	METC	3491	NERC Alert Facility Ratings for 2011	Verify and remediate facilities as required due to the industry-wide NERC alert	MI	Other	Not Shared	Reliability	$2,100,000	12/31/2011
East	METC	3505	Eaton Rapids Load Interconnection	Serve new load in Eaton Rapids with 2 new 138kV circuits from Clinton Jct. and the Delhi-Tompkins circuit	MI	Other	Not Shared	Distribution	$28,500,000	1/1/2013
East	WPSC	3328	Barryton	New Distribution Interconnection from the Hersey to Weidman circuit	MI	Other	Not Shared	Distribution	$100,000	12/31/2011
East	WPSC	3329	Burnips to Wayland	Rebuild the Burnips to Wayland line section with a larger conductor	MI	Other	Not Shared	Reliability	$7,250,000	12/31/2013
East	WPSC	3330	Cansovia Capacitor Bank	Install a Capacitor Bank tap at the Casnovia substation	MI	Other	Not Shared	Reliability	$260,000	12/31/2011
East	WPSC	3331	Redwood to Hart	Rebuild the Redwood to Hart line section with a larger conductor	MI	Other	Not Shared	Reliability	$750,000	12/31/2015
East	WPSC	3332	Bass Lake Transmission Upgrade	Install Relaying	MI	Other	Not Shared	Reliability	$250,000	2/28/2011
East	WPSC	3333	Lemon Junction Transmission Station	Construct a single breaker station	MI	Other	Not Shared	Reliability	$350,000	12/31/2011
East	WPSC	3334	Casnovia to Sternberg	Rebuild a portion of the line for Distibution Underbuild	MI	Other	Not Shared	Reliability	$400,000	6/30/2011

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East	WPSC	3335	Burnip Transmission Station Upgrade	Upgrade to replace outdated equipment. Bus, breakers, relays, and other equipment as necessary.	MI	Other	Not Shared	Condition	$900,000	12/31/2013
West	ATC LLC	174	Canal-Dunn Road 138 kV	Construct a 7.7 mile Canal - Dunn Road 138 ckt , Sum rate 400; install a new 138/69 kV transformer at Dunn Road substation.	WI	Other	Not Shared	Reliability	$24,763,300	3/1/2012
West	ATC LLC	333	Hiawatha-Indian Lake conversion to 138 kV	Hiawatha-Indian Lake conversion to 138 kV	MI	Other	Excluded	Condition	$4,900,000	6/1/2013
West	ATC LLC	1699	Mckenna & Chaffee Ck Capacitor Banks Upgrades	Upgrade Mckenna 6.3 MVAR capacitor bank to 15.3 MVAR and upgrade Chaffee Ck 10.8 MVAR to 14.4 MVAR capacitor bank	WI	Other	Not Shared	Reliability	$686,750	7/31/2011
West	ATC LLC	1705	Bass Creek area upgrades	Install a 138/69 kV transformer at Bass Creek substation, Uprate Townline Road-Bass Creek 138 kV line	WI	Other	Not Shared	Reliability	$6,975,946	4/1/2011
West	ATC LLC	2036	Uprate Y-40 Gran Grae-Boscobel 69 kV	Increase line clearance to 200/300 deg F SN/SE	WI	Other	Not Shared	Condition	$5,291,028	12/15/2011
West	ATC LLC	2037	Rebuild Dane-Okee 69 kV	Rebuild Dane-Okee 69 kV	WI	Other	Not Shared	Reliability	$6,798,033	6/19/2012
West	ATC LLC	2055	Clear Lake-Woodmin 115 kV	Construct a 7.5 mile 115 kv line from Clear Lake to a new Woodmin distribution substation	WI	Other	Not Shared	Reliability	$21,331,000	6/1/2012
West	ATC LLC	2820	Replace Bluemound 230/138kV transformerT1	Replace Bluemound 230/138kV transformer T1 with a 400 MVA unit	WI	Other	Not Shared	Condition	$8,200,000	5/31/2012
West	ATC LLC	2842	Uprate Spring Green-Stage Coach 69-kV	Uprate Spring Green-Stage Coach 69-kV	WI	Other	Not Shared	Reliability	$6,957,394	4/8/2011
West	ATC LLC	3095	Uprate 9Mile-Roberts 69 kV line 6952	Increase ground clearance for the 9Mile-Roberts 69 kV line 6952 to 176 deg f clearance for all seasons & Install Arresters, Replace Select Components	MI	Other	Not Shared	Reliability	$19,743,032	4/1/2012
West	ATC LLC	3108	Rebuild Pine River-Straits 69kV dbl ckt line	Rebuild Pine River-Straits 69kV dbl ckt line with t2-477 ACSR	MI	Other	Not Shared	Reliability	$40,804,513	6/1/2014
West	ATC LLC	3126	Install a 2nd Chandler Transformer	Install a 2nd Chandler Transformer & reconfigure bus to 138 kV Ring bus	MI	Other	Not Shared	Reliability	$9,700,000	12/9/2012
West	ATC LLC	3157	Line Y-95 Fount Valley-Fountain Valley Tap-Red Granite Tap-ACEC Spring Lake Tap-Silver Lake-Wautoma Uprate	Line Y-95 Fount Valley-Fountain Valley Tap-Red Granite Tap-ACEC Spring Lake Tap-Silver Lake-Wautoma Uprate	WI	Other	Not Shared	Reliability	$362,468	6/17/2011
West	ATC LLC	3188	Pleasant Prairie-Zion 345-kV uprate	Replace 345kV Wave traps at the ComEd Zion SS and Jumpers	WI/IL	Other	Not Shared	Economic	$1,544,571	3/25/2011

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West	ATC LLC	3395	Milwaukee Co T-D	Install a new Milwaukee Co T-D substation by looping in line 5042 (Bluemound-Everett 138kV)	WI	Other	Not Shared	Distribution	$33,500,000	4/1/2015
West	ATC LLC	3396	Uprate Blue River Tap-Muscoda 69 kV	Uprate Blue River Tap-Muscoda 69 kV line by increasing clearance at a distribution crossing to 564 Amps	WI	Other	Not Shared	Condition	$580,000	11/15/2010
West	ATC LLC	3428	Stage Coach-Timberlane 69kV uprate	Increase ground clearance for the Stage Coach-Timberlane 69kV line	WI	Other	Not Shared	Reliability	$35,000	4/8/2011
West	ATC LLC	3432	Uprate Stoughton-Oregon 69kV line	Uprate Stoughton-Oregon 69kV line	WI	Other	Not Shared	Reliability	$570,000	4/21/2011
West	ATC LLC	3433	Uprate Stagecoach-Mt Horeb NE-Mt Horeb 69 kV line Y-128	Uprate Stagecoach-Mt Horeb NE-Mt Horeb 69 kV line Y-128	WI	Other	Not Shared	Reliability	$36,505	12/31/2011
West	ATC LLC	3447	Ontonagon 138/69kV Tr uprate	Retap CT related to Ontonagon 138/69 kV Tr to obtain a higher rating	MI	Other	Not Shared	Reliability	$12,410	12/7/2010
West	ATC LLC	3448	Ontonagon 138/69kV Tr Replacement	Replace the Ontonagon 138/69 kv Tr with a larger unit	MI	Other	Not Shared	Reliability	$935,786	12/1/2011
West	ATC LLC	3449	Rebuild the Atlantic-M38 69kV line	Rebuild the Atlantic-M38 69kV line with a larger conductor	MI	Other	Not Shared	Reliability	$18,878,963	12/31/2013
West	ATC LLC	3451	Y-136 Mt Horeb-Verona 69kV Rerate	Increase ground clearance on the Mt Horeb-Verona 69kV line	WI	Other	Not Shared	Reliability	$710,000	11/1/2011
West	ATC LLC	3452	Y-158 Bass Ck-Sheepskin 69kV Rerate	Increase ground clearance on the Bass Ck-Sheepskin 69kV line	WI	Other	Not Shared	Reliability	$920,000	11/1/2011
West	ATC LLC	3453	Y-25 Waupun-S Fond du Lac 69kV Rerate	Increase ground clearance on the Waupun-S Fond du Lac 69kV line	WI	Other	Not Shared	Reliability	$2,186,630	2/28/2012
West	ATC LLC	3458	Aurora 115-69kV T3 Replacement	Aurora 115-69kV T3 Replacement	WI	Other	Not Shared	Condition	$2,958,914	6/3/2011
West	ATC LLC	3460	Y-93 Berlin-Ripon 69kV Uprate	Increase ground clearance on the Berlin-Ripon 69kV line	WI	Other	Not Shared	Reliability	$1,389,745	2/28/2011
West	ATC LLC	3472	Pleasant Prairie Bus Reconfiguration	Construct a new 6-rung breaker-and-a-half 345 kV bus at the P4 site adjacent to the existing P4 yard.	WI	Other	Not Shared	Reliability	$39,400,000	3/22/2013
West	ATC LLC	3479	Progress-Aviation 138 kV Uprate	Increase ground clearance for the Progress-Aviation line to 187 degrees F	WI	Other	Not Shared	Condition	$492,563	3/1/2012
West	ATC LLC	3480	Engadine Load Move	Construct a new radial 69-kV tap from the existing Indian Lake-Hiawatha 69-kV line 6913 to the Engadine Substation	WI	Other	Not Shared	Reliability	$810,804	10/1/2012
West	ATC LLC	3488	Uprate Brick Church to Walworth 69 kV line	Asset management project to uprate Y-159 from Brick Church to Walworth 69 kv Line	WI	Other	Not Shared	Condition	$532,000	3/1/2012

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West	ATC LLC	3489	UprateY-34 Jennings Road to Darlington 69 kV line	Asset management project to uprate Y-34 from Jennings Road to Darlington 69 kv Line	WI	Other	Not Shared	Condition	$314,000	3/1/2012
West	ATC LLC	3504	Y-80 Omro to Winneconne Rerate	Rerate Line Y-80 conductor from Omro sub to Winneconne sub to a rating of 580 amps	WI	Other	Not Shared	Condition	$205,000	12/1/2012
West	DPC	3434	Lufkin 161 kV substation	Build a new 161 kV substation on the Alma to Elk Mound 161 line in the Eau Claire area.	WI	Other	Not Shared	Reliability	$2,164,000	9/1/2012
West	GRE	2571	MN Pipeline-Menahga 8.0 mile line	MN Pipeline-Menahga 8.0 mile line. Built 115 kV but will be operated at 34.5.	MN	Other	Not Shared	Distribution	$4,199,990	11/15/2014
West	GRE	2599	Shell Lake (IM) 5.0 mile, 115 kV line	Shell Lake (IM) 5.0 mile, 115 kV line	MN	Other	Not Shared	Distribution	$4,201,000	10/31/2014
West	GRE	2643	Parkers Prairie 115 kV conversion	Parkers Prairie 115 kV conversion, New Distribution tap	MN	Other	Not Shared	Distribution	$1,220,998	5/1/2013
West	GRE	2679	Ramsey-Grand Forks (81.02 mi.) 230 kV Rebuild	Ramsey-Grand Forks (81.02 mi.) 230 kV Rebuild	MN	Other	Not Shared	Condition	$40,500,000	11/1/2019
West	ITCM	3406	Adams-Rochester Terminal Upgrades	Upgrade the Adams terminal equipment to winter conductor limit	MN	Other	Not Shared	Reliability	$360,000	4/29/2011
West	ITCM	3407	Bluff Substation Additions	Add 69kV breakers to the Bluff Substation 69kV and install associated relay equipment.	IA	Other	Not Shared	Distribution	$1,920,000	12/31/2011
West	ITCM	3408	BooneQuartz Sustation	This project performs the conversion of the Boone Quartz substation from 34.5kV to 69kV as part of the overall rebuild and conversion of the 34.5kV system. The Boone Quartz substation was constructed with a dual high side transformer and the high side was laid out for 69kV operation in preparation for the conversion. Two 69kV line breakers will be installed at the Boone Quartz substation. Existing 69kV lines and 34.5kV lines already constructed for 69kV operation will be re-configured along with installation of 69kV taps into the Boone Quartz substation to make the change to 69kV. No new load is being added during the conversion to 69kV.	IA	Other	Not Shared	Reliability	$1,700,000	12/31/2011
West	ITCM	3409	Bricelyn-Walters Rebuild	The recommended project is to completely rebuild a 5 mile section of the Bricelyn - Walters 69 kV line with standard T2-477 construction and shield wire.	IA	Other	Not Shared	Condition	$2,625,000	12/31/2013

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West	ITCM	3411	Bridgeport T8	Add a 69kV breaker to the Bridgeport North 69kV ring and install associated relay equipment.	IA	Other	Not Shared	Distribution	$360,000	12/31/2011
West	ITCM	3412	Fort Madison Interconnection	Install tap capable of double circuit 69kV to Fort Madison substation and install associated relay equipment.	IA	Other	Not Shared	Distribution	$360,000	12/31/2012
West	ITCM	3413	Gladbrook 161kV tap	Install a 161kV tap pole in the Marshalltown to Traer line with two line switches. Construct a 161kV tap line to the new Gladbrook substation.	IA	Other	Not Shared	Distribution	$300,000	12/31/2013
West	ITCM	3414	Magnolia 7.1 MVAR 69kV Cap	ITCM will move the existing Lewisville 69kV 7.1 MVAR capacitor to the 69kV bus at Magnolia. Recent system changes have opened up a 69kV bay at Magnolia and this will be used for the capacitor bank and 69kV breaker.	IA	Other	Not Shared	Reliability	$480,000	12/31/2012
West	ITCM	3416	Marion Circuit 0410 Rebild to 69kV	This project rebuilds the sections (approximately 25 miles) of Marion circuit 0410 that will be utilized in the overall 34.5kV to 69kV conversion plan but have not yet been constructed for 69kV operation.	IA	Other	Not Shared	Distribution	$10,500,000	12/31/2012
West	ITCM	3417	Marshalltown East Nevada	Construct a 1-2 span 34.5kV tap, install new relays for Marshalltown circuits 1810 and 2620, and upgrade terminal limit to address overload during contingency. Remove two normally open switches to limit system configuration to address system protection coordination issues which can occur when rural and city circuits are tied together.	IA	Other	Not Shared	Reliability	$280,000	12/31/2011
West	ITCM	3418	Mount Vernon Circuit 6420 Rebild to 69kV	This project rebuilds the sections (approximately 17 miles) of Mount Vernon circuit 6420 that will be utilized in the overall 34.5kV to 69kV conversion plan but have not yet been constructed for 69kV operation.	IA	Other	Not Shared	Distribution	$7,150,000	12/31/2013
West	ITCM	3419	Bertram161kV tap	The new transformer high side voltage is 69/34.5kv; it will need a 0.5 mile tap line built to the substation from the existing 34.5kV system with the future plans of 69kV rebuild. Adding the double-circuit tap to the substation will allow connection to the new transformers. The double circuit tap will provide additional reliability, with switching, to have the ability to separate the parallel transformers in the situation a transformer fails, no load will be lost.	IA	Other	Not Shared	Distribution	$270,000	12/31/2012

Planning Region	Geographic Location by TO Member System	PrjID	Project Name	Project Description	States	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)
West	ITCM	3420	OGS Breaker	Install new 345kV breaker in the Ottumwa Generating Station substation to replace the failed 345kV circuit switcher. Replace the transformer lockout/breaker control panel. Replace the existing 345kV relay panel with two new panels and one lockout panel, which will allow for the retirement of an existing transfer trip scheme. The new line panels will implement a new redundant transfer trip scheme. Install second set of battery back up.	IA	Other	Not Shared	Condition	$1,350,000	12/31/2011
West	ITCM	3421	Centervile 7.1 MVAR 69kV Cap	nstall a 7 MVAR 69 kV capacitor, breaker with synchronous closing control, switch, and 0.5 mH reactor. 69 kV breakers 0-6961-1 and 0-6921-2 will be replaced due to condition. A 69 kV bus tie breaker and switch will be added for reliability between transformers 2 and 3.	IA	Other	Not Shared	Reliability	$1,350,000	12/31/2011
West	ITCM	3422	South Broadway TEQ	Install Sub	IA	Other	Not Shared	Distribution	$150,000	12/31/2012
West	ITCM	3423	Truro Line Rebuild	Rebuild the line between the Truro substation and the White Oak tap and operate the line at 69 kV.	IA	Other	Not Shared	Reliability	$3,360,000	12/31/2011
West	ITCM	3425	VMEU Interconnect	Install line switches at the interconnection point.	IA	Other	Not Shared	Reliability	$110,000	12/31/2011
West	ITCM	3426	DPC/ITC Interconnect move	The recommended project is to move the existing interconnection point approximately 0.6 miles south. ITC will install a laminate structure and associated equipment to accommodate DPC's project.	IA	Other	Not Shared	Distribution	$0	12/31/2013
West	MEC	3270	CBEC-River Bend 161 kV Rebuild	Increase 161 kV line rating.	IA	Other	Not Shared	Reliability	$675,000	6/1/2011
West	MEC	3271	River Bend-Bunge 161 kV Rebuild	Increase 161 kV line rating.	IA	Other	Not Shared	Reliability	$700,000	6/1/2011
West	MEC	3272	Raun 345 kV Breaker Replacement	Replace existing SFA 345 kV breaker 0170 with a new unit.	IA	Other	Not Shared	Condition	$500,000	6/1/2011
West	MP	2549	15L Upgrade	Thermal Upgrade of MP Line #15	MN	Other	Not Shared	Reliability	$3,179,000	6/1/2014
West	MP	3374	Greenway	Re-energize existing 115/23 kV substation	MN	Other	Not Shared	Distribution	$700,000	11/1/2012
West	OTP	2856	Victor-New Effington 41.6 kV Line Upgrade	Rebuild Existing 4-Mile 41.6 kV Line	SD	Other	Not Shared	Reliability	$200,000	6/30/2011

Planning Region	Geographic Location by TO Member System	PrjID	Project Name	Project Description	States	Allocation Type per FF	Share Status	Other Type	Estimated Cost	Expected ISD (Max)
West	XEL	3310	Highway 212 Corridor upgrade	This project is to complete the conversion of 69 kV line between Scott County and West Waconia substation to 115 kV. The scope also involves building new West Creek distribution substation and converting the Chaska, Victoria and Augusta substations to 115 kV.	MN	Other	Not Shared	Distribution	$19,450,000	6/1/2012
West	XEL	3313	New Prague switch	This project is to install a 69 kV 1 way switch to provide SMMPA's New Prague substation a new interconnection point. The existing interconnection would require cutting the line jumpers phisically when the New Prague - Veslie line is out of service.	MN	Other	Not Shared	Reliability	$180,000	6/1/2012
West	XEL	3322	Cedar Falls - Clear Lake Rebuild	Rebuild 43 Miles of 69 kV line to 477 ACSR	WI	Other	Not Shared	Reliability	$14,000,000	6/1/2013
West	XEL	3323	Park Falls Bio-Refinery	Build radial 115 kV line from Park Falls sub to a new customer and install a new distribution sub for the customer	WI	Other	Not shared	Distribution	$23,769,000	6/1/2013
West	XEL	3324	Eau Claire Overstressed Breakers	Replace overstressed Eau Claire 69 kV breakers. 4E185, 4E186, 4E187, 4E188, 4E189, 4E190, 4E191, 4E192, 4E193, 4E195.	WI	Other	Not Shared	Reliability	$1,683,000	12/1/2011
West	XEL	3325	Orono 115 kV conversion	This project will move the supply for Orono from its current 69 kV supply to the 115 kV line from Medina to Crow River	MN	Other	Not Shared	Reliability	$5,340,000	12/1/2012
West	XEL	3327	Eau Claire - Madison Street Rebuild	This project will replace 1 mile of 4/0 Cu conductor with 795 ACSS on the 69 kV line between Eau Claire - Sterling - Madison St.	WI	Other	Not Shared	Reliability	$1,600,000	12/1/2011
West	XEL	3473	Sioux Falls 115 kV Phase 1	This project re-constructs 10 miles of existing 69 kV line in Sioux Falls, SD to 115 kV; 6 miles of the new line will be double circuit with existing 69 kV.	SD	Other	Not Shared	Reliability	$35,000,000	6/1/2014
West	XEL	3474	Adams 345 kV Reactor Installation	Installing a 50 MVAR reactor at Adams substation on the Pleasant Valley line, along with a breaker and disconect switch	MN	Other	Not Shared	Reliability	$2,260,000	6/1/2012
West	XEL	3509	Stinson to Bayfront 115 kV line rebuild	Rebuild approximately 33 miles of 115 kV line from 336 ACSR to 795 ACSR	WI	Other	Not Shared	Condition	$15,400,000	1/1/2013
West	XEL, GRE	3454	Hollydale 115 kV upgrade	This project will upgrade the 69 kV line from GRE's Medina to Plymouth substations. A new switching station will be added on GRE's 115 kV line between Parkers Lake and Elm Creek north or south of the Plymouth Substation depending on the permitted location. Joint project with GRE P3394 at Medina	MN	Other	Not Shared	Reliability	$24,676,164	6/1/2013