

Energy Design Assistance: **Program Manual**

Colorado

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Executive Summary

The greatest opportunities to affect the energy use of a building occur during the design and construction phases. Decisions made during design are typically driven by aesthetics, first costs and whether the design teams are familiar with newer technologies. Information on how these decisions will have an impact on operating costs, specifically energy consumption, is not readily available to the designer. Obtaining the data is the primary barrier, as accurate projections require complex, detailed analysis.

This document summarizes the process used for the Colorado Energy Design Assistance (EDA) program. The program provides an opportunity for Xcel Energy customers and qualified building design professionals to participate in an integrated design process. Xcel Energy provides design consulting services and reimbursement for meeting participation to the design team, and monetary incentives to the building owner for achieving energy savings beyond the Xcel EDA Baseline (Please see Modeling Protocol for definition of EDA Baseline if needed) . *Note that a separate document titled “EDA Modeling Protocol” details the processes and requirements for modeling under the EDA Program.*

The Energy Design Assistance mission is to provide Xcel Energy business customers solutions to their ongoing energy needs. By providing whole building energy analysis, we can help customers¹ achieve their energy and sustainability goals by making energy-efficient equipment and collaborative design a priority. EDA modeling consultants work directly with the customer and design teams. These consultants should aim to make the customer number one in energy-efficiency, as well as achieve Xcel Energy’s goals to improving our environment and providing the leadership to make a difference in the communities we serve.

The program has been available to Colorado customers since 2005 and Minnesota customers since 1993. The program remains successful by meeting or exceeding customer’s expectations and Xcel Energy’s savings goals.

The EDA program was not developed to rate buildings on a national level, but rather to help our customers achieve higher levels of energy efficiency. This goal is why the Green Building certification support, such as the LEED[®] process, was added to the EDA program rather than defining it. Significant differences can be found between the two models due to state regulations and baseline definitions. EDA is structured to work with participants during the early design phases before designs are finalized. This helps customers and Design Teams identify energy savings early in the design process when they have better opportunities to make design changes.

The program addresses a number of the barriers to a greater adaptation of energy-efficient strategies in new commercial and industrial buildings, including:

1. **Energy Consulting Services:** Xcel Energy financially supports the services rendered by an energy consultant to help facilitate the decision making process of the Xcel Energy customer. These services include modeling the entire building for energy savings as well as individual strategy modeling, schematic description of selected strategies, and packaging measures into design alternatives, which are analyzed for their net effect on the building energy use.

¹ The program customer includes Xcel Energy’s electric ratepayers and customers on the Company’s retail gas rate.

2. **Construction incentives:** Once a package of energy savings has been verified, an incentive commensurate with the energy savings projections is offered to the building owner by Xcel Energy based on the selected energy efficiency strategies.
3. **Construction Document (CD) Review:** A Measurement & Verification Consultant will review construction documents for selected energy efficiency strategies. The energy modeling consultant will create a CD model based on the M&V consultant's CD results.
4. **Measurement and Verification:** Upon completion of construction, the operation of the areas affected by the strategies is reviewed in the field by a M&V Consultant to provide feedback to the owners and design team on the as-verified results. The energy modeler creates a final M&V model based on the results.
5. **Design Team Incentives:** While design teams are often interested in exploring energy saving alternatives, the typical fee structure provides little room for alternative analyses. Therefore, the EDA program offers a financial reimbursement to help compensate the design team for their time participating in the process.

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1.1 Introduction

The EDA program offers building owners, architecture and engineering (A/E) firms, and developers the opportunity to participate in an integrated design process to identify and implement cost-effective energy efficient strategies early in the design process. Xcel Energy provides energy design assistance services to the design team, incentives to the design team members for participating in the process, and monetary incentives to the building owners for energy savings beyond the Xcel EDA Baseline. Refer to the Xcel EDA Modeling Protocol for more information on determining the EDA Baseline.

The EDA Program offers comprehensive energy design assistance to Xcel Energy business customers for new buildings, additions, or major renovations. Eligible Xcel Energy business customers have the option of selecting an Energy Consultant (EC) through two paths.

Energy Consultant Selection Paths:

- 1) **Customer selects Xcel Energy EDA contracted consultant.** These modelers are chosen with a Request for Proposal approximately every four years. Contracted consultants are paid on a fee for service basis. This track has been in existence in Colorado since 2006.
- 2) **Customer selects EDA open consultant.** Modelers are chosen through a qualification criteria review to become a qualified consultant providing EDA services. Consultants are paid on a pay for performance basis. This path is relatively new beginning in mid-2013.

This Program Manual has been prepared specifically for the EDA open consultant path. The Manual aims to facilitate the effective and efficient management of the EDA Program. The Manual presents and describes the steps of the EDA process, and the activities that the energy consultant will perform on behalf of Xcel Energy.

This program manual will guide the implementation of the EDA Program and will be updated / revised as required based on lessons learned from the EDA process and participating projects.

2.0 Program Parameters

The Energy Design Assistance program and the Energy Efficient Building program² are filed together as New Construction under the Demand-Side Management (DSM) Plans. New Construction is approved by the Colorado Public Utilities Commission through the most current Demand-Side Management (DSM) Plan filing.

Upon completion of projects submitted under the program, any necessary measurement and verification (M&V) activities will be conducted when: 1) construction of the facility is completed; 2) the building is at least 80% occupied and the systems are operating as intended.

2.1 Program Impact and Savings Goals for New Construction

A summary of filed DSM Plan savings goals for the program is presented the following table.

| | 2013 | 2014 | 2015 | 2016 | 2017 |
|----------|------------|------------|------------|------------|------------|
| Gen. kWh | 24,790,163 | 34,134,139 | 41,961,097 | 25,345,531 | 24,099,514 |
| Dth | 48,501 | 140,545 | 94,692 | 58,934 | 42,186 |

2.2 Relationship to Other DSM Programs

The Energy Design Assistance Program complements the current Commercial & Industrial (C&I) DSM program offerings. The program focuses on energy efficiency for new construction projects achieved through an integrated design approach. Other programs offered by Xcel Energy include end-use programs and custom programs. Custom programs offer existing buildings the opportunity to look into further analysis of processes and opportunities beyond the basic end-use programs. The portfolio of programs can be found on the Xcel Energy website at: www.xcelenergy.com/rebates.

2.3 Eligibility

Commercial and Industrial³ customers, within Xcel Energy's Colorado territory, are eligible to participate in the Energy Design Assistance Program. Three types of buildings meet the eligibility requirements⁴.

1. New construction
2. Building additions
3. Major building renovations (building must include significant renovations of at least two of the following three systems: building envelope, lighting/electrical, and mechanical systems).

Energy Design Assistance offers three tracks for customer involvement: (1) Basic, (2) Enhanced, and (3) Express.

² For information on the Energy Efficient Buildings Program visit: www.xcelenergy.com/businessnewconstruction.

³ Industrial customers may benefit from our Process Efficiency Program instead of participating in EDA alone. Process Efficiency does allow for process review of existing and new facilities.

⁴ Parking garages do not count towards the minimum square footage requirements, nor do they qualify for enhanced track

services. Projects that qualify for EDA and have garages can receive basic track services.

Projects will be assigned a specific track as appropriate, determined by the details within the application and information gained at the introductory meeting. Projects that do not qualify in either track will be considered for our Energy Efficiency Buildings program or referred to other Xcel Energy efficiency programs.⁵ These Energy Design Assistance track eligibility requirements are highlighted below.

Further details about EDA and the tracks can be found at xcelenergy.com/businessnewconstruction

2.3.1 Basic Track Eligibility

- Square Footage: Greater than 20,000 (new construction, major renovation or additions). Low-rise multifamily projects (3 stories and below) should be greater than 50,000 SF.
- Application Submittal: Schematic Design or early Design Development. Applications should be submitted a minimum of 6 weeks prior to 100% Design Development drawings.
- Savings Commitment: Minimum of 15% electric energy demand savings compared to the EDA Baseline. Minimum of 15% gas savings compared to the EDA Baseline.

2.3.2 Enhanced Track Eligibility

The EDA Enhanced track is for customers who have a more aggressive energy goal in mind and want to begin their analysis in pre-design. By taking a look at earlier design options there is greater flexibility to make decisions in such things as building orientation and daylighting. Several additional types of work are completed within the Enhanced process, creating an EDA Enhanced Scope of Work as detailed further in section 4 of this Program Manual.

- Square Footage: Same as Basic Track
- Application Submittal: Pre-design or Schematic Design
- Savings Commitment: Minimum of 30% electric energy demand savings compared to the EDA Baseline. Minimum of 15% gas savings compared to the EDA Baseline.
- **If obtaining certification, customer shows proof of registration with third party verified green building certification**, such as the United States Green Building Council's Leadership in Energy and Environmental Design (LEED), Enterprise Green Communities, CHPS or EnergyStar. Proof must be shown no later than end of the FEA stage.

2.3.3 Express Track Eligibility

The intent of the Express Track in the Open EDA path is to create a cost-effective analysis process for projects that fit the following criteria:

- * Are 20,000 to 50,000 SF
- * Are a common building type
- * kWh savings is estimated to be less than 3x the total building square footage.

The Express Track offers Pay for Performance (P4P) to the energy consultant of **33%** of the owner's incentive for projects under 50,000 SF.

Projects greater than 50,000 SF may utilize the Express Track format with Xcel Energy permission, but Energy Consultant is paid at the regular Basic Track P4P rates.

⁵ Multifamily major renovation type projects receiving low-income funding should first be reviewed for eligibility in Xcel Energy's Low-Income Programs

The Express analysis draws on results from the energy consultant's previous modeling experience of similar building types and systems to eliminate the Preliminary Energy Analysis (PEA) hourly building simulations of the actual project.

To recommend a project for the Express track, the energy consultant must identify their intended method of calculating annual energy cost savings for the PEA when submitting the introductory report in EDAPT. The energy consultant shall propose and describe the method in the EDAPT "Public Comments" section. Projects recommended for the Express track will be considered on a case by case basis.

In the event that a project is not approved for the Express track, the energy consultant may wish to consider requesting additional funds from the customer. For detailed information on the Express Track adjusted process see Section 5 of this Manual.

2.4 Building Owner Rebates & Technical Baselines

Rebate/Incentive - Owner construction rebates for projects under the 2015 IECC are \$450/kW and \$0.04/kWh, and \$4/Dth saved over the EDA baseline*, as of January 1, 2017, and ending December 31, 2018. For projects enrolled outside of those dates or under older codes, the owner construction rebates are \$400/kW, \$0.04/kWh, and \$4/Dth saved over the EDA baseline.

Technical Baseline - Energy Design Assistance projects must implement a combination of energy saving measures that meet or exceed Xcel Energy's required minimum annual energy savings thresholds in order to achieve the full potential of cash incentives. **If the minimum required 30% savings are not met in the Enhanced track, any early analysis modeling and the Green Building Certification work, such as LEED EA Credit 1, will not be reimbursed.**

All projects must achieve at least 5% energy demand savings (kW), 5% energy savings (kWh), and 5% natural gas (Dth) savings to realize *any customer* incentive. Savings are exclusive of each other. Example, a project that saves 15% kW, 4% kWh, and 5% Dth will receive a rebate for kW and Dth; not kWh.

2.4.2 Combining Energy Efficient Strategies for Building Owner Incentives

There are two goals of combining energy-efficient strategies for customers. First, we capture the net effect of energy savings in the building, providing a more accurate assessment of savings accomplishments for both the customer and utility. Second, we are able to leverage low return investments with higher return investments, allowing for the opportunity to capture greater total savings.

A minimum of four or more design alternatives are required to be analyzed by the modeling consultant. These design alternatives will be presented for Xcel Energy customers as such:

Baseline Building Design

The minimum compliant building with the absence of energy modeling compared to the EDA Baseline. This is used as the basis for incentive calculations. Because this Code has multiple compliance paths and allows for options which do not meet DSM regulatory guidelines, an interpretation has been developed for program administration. This modification is described in Xcel Energy's **EDA Modeling Protocol**.

- Alternative 1:** Includes the measures that will likely be incorporated into the building, based on the opinions of the parties at the table in the early design stages of the project. Includes payback.
- Alternative 2:** Adds to or modifies measures from alternative 1 to include additional energy saving features that could potentially be acceptable to the owner and occupants from an operational perspective, with the understanding that additional background or training may be required to confirm acceptance. From a cost standpoint, some of these items may have longer paybacks and/or require additional funding. Includes payback.
- Alternative 3:** Alternative measures not the same as design alternatives 2. Includes payback.
- Alternative 4:** Include all measures that optimize energy savings, to serve as an *illustration of maximum potential* given the list of strategies considered. Includes payback.

The results are used by the Design Team to determine an appropriate solution and choice.

The design team and customer are generally most interested in annual energy cost savings, incentive potential and first cost impacts associated with the strategies. Because of regulatory requirements, the analysis reporting also includes kW, kWh and Dth savings compared back to the EDA program baseline.

2.5 Energy Consultant and Design Team Incentives

2.5.1 Energy Consultant Incentive

Pay for Performance (P4P): Energy consultants will be paid 25%⁶ of the owner's total incentive, provided the project meets the savings requirements stipulated in section 2.3. An average Energy Design Assistance project currently receives approximately a \$92,000 incentive. In addition, energy consultants will be paid 4% of the owner's incentive for each early analysis and certification conducted under the enhanced track (see below). Early analysis types include: massing, daylighting, HVAC, and early lighting. Certifications must be 3rd party verified and approved by Xcel Energy.

P4P payment schedule: Energy consultant will be paid two times through the EDA project life (based on the total 25% of the owner's incentive provided the project meets the savings requirements stipulated in section 2.3:

- 40% of the Energy Consultant's Incentive will be paid after the final energy analysis (FEA) report is approved.
- 30% of the Energy Consultant's incentive will be paid after the Construction Document (CD) report is approved.
- 30% of the Energy Consultant's incentive will be paid after the field Measurement & Verification (M&V) report is approved, and based on actual energy savings in M&V report.⁷

⁶ Note: total incentive to EC is capped at \$100,000 per project. Express track is 33% of the owner's total incentive.

⁷ Note: At the time of final M&V, if payments previously made to EC are greater than the customer's incentive, the EC will be expected to return the overpayment to Xcel Energy.

2.5.2 Design Team Incentives

Xcel Energy will pay design professionals on the design team, whom the customer has chosen for the design of the building, for specific activities that contribute to the completion of the project. The incentive will be in the form of a lump sum based on conditioned square footage and distributed after the design intent has been determined and requirements of the design team have been met, as bulleted below.

The following are the lump sums current as of 1/1/2013.

| | | | | |
|-------------------------|-----------------|-----------------|-------------------|------------|
| Square Footage | 20,000 – 49,999 | 50,000 – 99,999 | 100,000 – 399,999 | 400,0000 + |
| Incentive Amount | \$4,000 | \$8,000 | \$10,000 | \$12,000 |

This reimbursement is expected to offset expenses for efforts incurred by the design team for participation in the program, which may include, but is not limited to, the following:

- o Attending design assistance meetings
- o Reviewing energy efficiency measures
- o Calculating costs of energy efficiency measures
- o Submitting construction documents for review
- o Completing other tasks directly related to the program

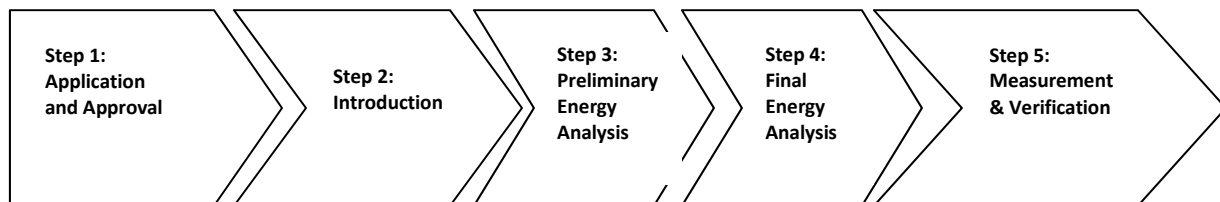
Actual costs incurred for the above tasks and any others related to the program by the design team and the customer during participation in the program may be greater or less than the lump sum reimbursement. The lump sum will not be adjusted over the cap for actual costs that are higher.

3.0 Customer Participation Procedures

The EDA Program process involves the participation of the Customer, Design Team, Xcel Energy, and their chosen energy-modeling consultant. In the following section, the objectives, outcomes and activities of each step are presented along with the actions to be performed by the program participants. These procedures address the EDA Basic track; the Enhanced track procedures are discussed in section 4 of this manual.

To manage the EDA program process Xcel Energy has developed an online portal called the Energy Design Assistance Project Tracker (EDAPT). EDAPT is to be used by the Xcel Energy Program Manager, Energy Consultant, Design Team, Building developer and/or owner as the primary system to track projects. EDAPT will also serve as the repository for required project related documentation.

Customer participation in the EDA Program involves five steps listed below. See Appendix A for the overview table of steps.



Key:
Energy-modeling Consultant = EC

Xcel Energy Program Manager = PM
Xcel Energy Marketing Assistant = MA
Xcel Energy Engineer = EEE
M&V Consultant = MVC
Xcel Energy Account Manager (This also includes the small business field rep) = AM

Step 1—Application & Approval

Intent of this step is to review the customer's project for inclusion and approval for the EDA program, or other Xcel Energy program.

Objectives:

Customer and/or Energy Consultant fills out online EDA application/agreement. Customer signs agreement and submits to Xcel Energy for review through EDAPT.

- Xcel Energy PM verifies requirements, then assigns AM and/or EC if not yet assigned and approves. PM sends preapproval email and application to customer, AM, EC, etc.
- EC reviews application to initially determine appropriate track viability.
- EC schedules introductory meeting between customer, design team and consulting firm including the PM and AM assigned to the project.

Step 2—Introduction

The intent of this step is to introduce the Customer and the Design Team to the program and to gather information to start the EDA process.

Objectives:

1. EC holds Introductory Meeting

Objective 1 - Introductory meeting

The objectives of the introductory meeting are:

- Educate owner and design team on the EDA program including incentives, program steps and schedules
 - EC prepares a report that summarizes the material to be discussed in the Introductory Meeting. The report will be distributed to meeting participants and copied to Xcel Energy⁸. EC holds and leads an **introductory meeting** between customer, design team and consulting firm including the Xcel Energy Account Manager (AM) assigned to the project. **It is mandatory that the AM (or an Xcel Energy designee) is in attendance at the introductory meeting.** EC confirms viability of project. Particular questions to focus on are the expected occupancy level after construction completion; and funding assurance throughout the building development.
- Project and Building Characteristics

⁸ Distribution to Xcel Energy includes any system in which can be referenced including email, mail and/or web based technology—which is preferred.

- Collect and record building characteristics information, desired features, EDA track chosen (basic or enhanced) and energy savings goals.
- Give design team incremental capital cost form and discuss method of collecting costs.
- Estimate energy kW, kWh and Dth savings and incentive for project
- EC determines viability of project and appropriate baseline and track for project.
- EC confirms and documents customer rate class (link:<https://www.xcelenergy.com/staticfiles/xcelenergy/Regulatory/COBusRates.pdf> See “rate summation sheets for electric and gas)
 - EC asks if customer is Xcel retail gas customer or transport (non-Xcel customer). EC explains to the customer the gas/no gas decision impacts, which include:
 - If customer is, or is going to switch to Xcel retail gas, then they must be a customer for at least one year (required by Xcel Energy contract)
 - Customer must determine if Xcel gas or not at time of both the introductory meeting, then again at Final Energy Analysis completion report.
 - EC to ask customer at **each stage** if any change in gas to/from transport or Xcel Energy sales gas. EC will note “Xcel Energy gas or transport gas” on all reports.
- Review potential energy savings to begin Preliminary Energy Analysis. Measures in the areas of envelope, lighting and mechanical systems improvements should be considered on each project. If measures from one or more of these broad areas are not carried forward from here, reasons for excluding them must be noted in the meeting minutes.
- Introductory meetings usually take approximately one hour, although they may go longer depending on the complexity of the project.
- All projects are subject to a technical review by an Xcel Energy engineer.
- EC fills out all required information in report template and uploads the intro meeting report in EDAPT for approval.

Step 3—Preliminary Energy Analysis

The intent of this step is to evaluate energy efficiency improvements, and assemble potential whole-building combinations for further analysis.

Objectives:

1. EC conducts energy analysis
2. Using the template provided in EDAPT the EC prepares the Preliminary Energy Analysis (PEA) report.
3. EC schedules and conducts PEA meeting to review modeling results. This meeting takes approximately two hours.

Objective 1 – EC conducts energy analysis

The EC will undertake energy analysis of the potentially viable energy efficiency improvements identified during the introductory meeting. Energy savings will be reported relative to a building that would just meet the program baseline.

- a. Determine energy savings of design alternatives identified in Step 2 (above), through building energy simulation
- b. Identify and analyze additional strategies that may become apparent as the result of initial building energy simulation
- c. Review measure costs (incremental construction costs of measures relative to the initial baseline design)
- d. Determine potential KBTU, kW, KWH, and DTH savings

The EC will gather cost information directly from the Design Team as part of compiling the PEA report. Actual costs should be used whenever available. For costs that are not received from the team, general costing may be used, but **MUST** be noted within the report. (Note: This step may or may not occur during this PEA stage, but must be completed for the final analysis.)

Objective 2 – EC prepares the PEA Report

A Preliminary Energy Analysis (PEA) report will be created identifying all opportunities available for the project. The PEA report template provided in EDAPT will include:

- Introduction
- Project status and design phase schedule including estimated completion dates for analysis and project stages
- Established project performance goals (ASHRAE or local code)
- Building description
- EDA Baseline, Cost Base, Certification Base (if applicable) and Code Base results and observations
- Summary measure list
- Best opportunities measure overview (top 10 +/-)
- Building characteristics (occupancy, construction, mechanical system details)
- Detailed results tables
- Energy efficiency recommendations
- Selected system/diagrams
- Other pertinent information
- Measure descriptions and modeling results, including details such as:
 - Wall mass types and R values
 - Glazing U factors and SHGC
 - Window-to-wall ratio
 - Roof R values

- Space type, floor area, and other design parameters
- Space internal gains
- Lighting/equipment power densities
- Mechanical (HVAC) system characteristics
- Service hot water system characteristics
- Supply and outdoor ventilation air capacities
- Supply fan total static pressure
- Utility schedules
- Weather (meteorological) data
- Full load equivalent hours of operation for lighting, equipment and occupants
- Energy conservation measure (ECM) descriptions
- Energy use summary (for all baselines)
- Energy cost summary (for all baselines)
- Certification points (or other metrics) estimates (if applicable)
- Energy analysis summary
- Wall areas by orientation
- Glazing area by orientation
- Hourly space schedules
- EUI
- Carbon dioxide reduction⁹

All report templates in EDAPT are pre-populated with available project information then can be downloaded and edited to include additional information the EC may wish to provide.

Objective 3 – EC schedules and conducts PEA meeting to review initial modeling results

The goal of this activity is to:

- Provide Customers the opportunity to identify measures outside their current design and pick opportunities based on energy simulations
- Educate customers and design teams on energy use characteristics by building type, energy standard requirements and potential design measures
- Present results of energy analyses to customer and design team

The EC will review the initial modeling results with the Customer and the Design team providing them with energy efficient opportunities. Typically, this should occur within six to eight weeks of the introductory meeting depending on the design schedule. PEA meetings can be the longest meetings in the process taking approximately 2-3 hours.

When additional simulations have been completed, these results will be reviewed along with the whole building analysis to help facilitate further opportunities within end uses such as HVAC and Lighting decisions.

Step 4—Final Energy Analysis

⁹ Specific reporting requirements for this analysis will be provided.

The intent of this step is to select those energy efficiency improvements that will be included in the proposed final design solution and to calculate the projected energy savings, demand savings and the construction incentive amount.

Objectives:

1. EC simulates identified measures; holds FEA meeting
2. EC prepares FEA report using template in EDAPT
3. EC determines design intent with customer – select design alternative
4. EC models customer selected design alternative and uploads into EDAPT. This design alternative will include all measures in order to use for CD review.

Objective 1 – EC simulates identified design alternatives (grouping of measures)

The EC, based on requests from the Design Team and customer, will conduct additional energy and economic analysis of the selected energy efficiency improvements to refine the proposed design energy model and optimize the integration of the energy efficiency improvements.

- Design alternatives should be completed according to the following:
 - Baseline Building: The minimum compliant building with the absence of energy modeling.
 - Design alternative 1: Includes the measures that will likely be incorporated into the building for multiple reasons, including aesthetic value, operational benefits, occupant comfort, owner preference and other non-energy specific criteria. This would also be known as the proposed initial design.
 - Design alternative 2: Adds to or modifies measures from Design alternative 1 to include additional energy saving features that could potentially be acceptable to the owner and occupants from an operational perspective, with the understanding that additional background or training may be required to confirm acceptance. From a cost standpoint, some of these items may have longer paybacks and/or require additional funding.
 - Additional design alternatives as needed.
 - Design alternative X: A final, High Performance design alternative that includes all measures that optimize energy savings, to serve as an illustration of maximum potential given the list of measures considered, regardless of payback.
- **Savings requirements. All design alternatives (above baseline) should be at or above the EDA program savings requirements.**

Objective 2 – EC prepares Final Energy Analysis report

Using the template provided in EDAPT, a Final Energy Analysis report will be prepared by the EC that summarizes the results of the final evaluation of energy efficiency improvements in the different Design Alternatives, and the strategies being considered for integration into the design solution.

The approved Customer construction incentives and potential energy savings will be presented in the report.

Objective 3 – EC determines design intent with customer – select design alternative

The design intent should be decided at the FEA meeting or shortly after. (A design alternative should therefore be selected.) This will narrow down what requirements will be needed from the Design Team for the Construction Document Review.

Objective 4 – EC models customer selected design alternative and uploads into EDAPT

Based on the customer selection, the EC will select or adjust the final design alternative (if needed) and enter in EDAPT. Final design alternative will show and describe all measures, in order to act as the CD review document in Step 5.

Design Team submits request for incentive form to Xcel Energy.

Step 5—Measurement and Verification (CD Review and Field Verification)

5.1 Construction Document Review

The intent of this step is to update and present the construction incentive that the Customer may receive after completion and based on the final Construction Documents (CDs).

Objectives:

1. EC prepares list of selected efficiency measures from the selected Design Alternative for M&V review (CD Review Table)
2. M&V Consultant (MVC) reviews CDs and checks for all energy efficient measures against design alternative selected in FEA. MVC calculates savings differences relative to selected Design Alternative.
3. MVC provides a verification plan¹⁰ for each strategy
4. EC updates model to reflect CD review results
5. EC prepares CD report and may send to Design Team to initially review; holds optional meeting; finalizes CD report and upload to EDAPT

Objective 1-3 – MVC reviews documents for energy efficiency strategies

The EC and MVC coordinate their review of the Construction Documents at design completion to ensure that the energy efficiency improvements chosen for the FEA selected design alternative are reflected in the project drawings and/or specifications. This process should include the following steps:

- EC contacts customer and/or design team to request For-Construction documents, specifications, and submittals as needed. (This request could also come from the MVC; however, since the EC already has an established relationship with the customer and design team by this time, it is usually more successful for the EC to perform this step.)
- EC generates the first pass at the CD Review table, with all strategies from the selected Design Alternative. EC also reviews the drawings for any other changes that may have occurred in the design since the FEA, such as architectural changes, space usage, or system changes that may also require a baseline change.
- EC notes any discrepancies from the selected Design Alternative, and may use the opportunity to work with the Customer to correct any deficiencies.
- EC sends CD Review Table and all other documentation needed to MVC for review and completion.
- MVC reviews CD Review Table and calculates savings differences between the final design and the selected design alternative
- MVC creates a Final Verification plan and includes these strategies in the CD Review Table for inclusion in the report. This includes:
 - Identification of any individual strategy over 1 GWh and/or 20,000 therms, as these measures require additional monitoring. For strategies over this threshold, the MVC will note these on the CD report and indicate which measures are over this threshold. The MVC will contact Xcel Energy to verify approach.

- Document verification approach including measures requiring data logging and other needs.

- MVC provides final CD review table to EC, design team and Xcel Energy via EDAPT.

Objective 4-5 – EC Prepares CD energy analysis and report

EC will update the energy model based on the package of measures included in the CD review by the MVC and recalculate the energy savings and potential incentive amounts. EC holds meeting to review (optional). EC uploads model results and completes the CD Report using the template in EDAPT. The CD Review Report will show and describe all measures and will act as the field verification review document.

Note: Proof of certification registration (Enhanced track only) is required no later than this CD stage.

¹⁰

The verification plan will include the dates of each site visit and additional requirements as necessary.

5.2 Field Verification

The intent of field verification is to ensure strategies are installed, and determine final energy savings and rebate dollars for completed projects. Detailed policies and process for verification is included in Section 6.5 of this Manual.

1. MVC verifies all energy-efficient strategies installed within the project
2. MVC measures operational strategies: 2-4 week data logging based on individual measures
3. EC finalizes energy savings and project incentive amounts
4. Using template in EDAPT, EC complete final verification report
5. Final payment to EC and Incentive to Customer

The MVC conducts field verification to ensure that the energy efficiency measures as shown in the CD review report are included the customer's building.

Objective 1 – MVC verifies strategies are installed

Consultant visits site and verifies that specified measures were installed using list from final CD report. Includes any additional energy efficiency measures not on the list.

Static measures: Visual inspection of installation and review of construction submittals for rated performance characteristics.

Objective 2 – MVC measures operational strategies

Measures dependent on operation or schedule: Short-term monitoring will be completed for a two-week period for the following measures.

- Fans/Pumps
- Lighting and HVAC on/off scheduling
- Spot meter of fixture/lamp/ballast power
- Controls such as CO2 sensors and daylighting controls

Measures over 1 GWh or 20,000 therms will need to be data logged/monitored for a four-week period. These should have been identified within the CD review and discussed with Xcel Energy how to move forward with final verification.

Objective 3 – EC finalizes energy savings and incentive

EC updates model based on the M&V conducted by the MVC. EC uploads model results and completes the M&V Report using the template in EDAPT.

Objective 4 – EC using template in EDAPT create final verification report

The final verification report is intended to provide the entire design team (including the account manager) an overview of what was found during verification. It is also documentation of verification for Xcel Energy.

Upon approval of final M&V report by Xcel Energy, final payment is sent to EC and incentive is sent to Customer. Project is closed in EDAPT.

4.0 EDA Enhanced Track - Adjusted Process

Projects that are following the Enhanced track are very similar to the Energy Design Assistance process as outlined above with some differences including goal setting predesign meeting, certification and/or early analysis, as outlined below. **Note: If the 30% energy savings are not met, the EC is not reimbursed for enhanced services including certification and early analysis work.**

4.1 Goal Setting - Enhanced

The intent of this step is to create and compare alternative energy-efficiency pathways during the predesign phase. EC may choose to hold a goal setting meeting with Design Team, Customer, and AM to discuss goals towards reaching 30% savings, strategies that are high impact, and the scope of work to each the 30% goal, and/or a predesigned goal set forth by the Customer. Decisions will be made as to which early analysis modeling may need to be run and what falls under the scope of an Enhanced project. This may be an additional meeting prior to the Introductory meeting as detailed in the Basic track process, or can be combined with the introductory meeting if held early in predesign phase. ***This is not reimbursed by Xcel Energy as an early analysis.***

Costs for activities outside the approved scope of the EDA program are the responsibility of the customer and/or design team.

Note – all early analysis that Xcel Energy may reimburse, including certifications, must show savings and cost impact potential from the analysis, in addition to the requirements listed below. A table format is preferred.

4.2 Early Analysis - Enhanced

Enhanced modeling can include several different services; the intent is to address key design issues early in design prior to optimizing the entire building. It is up to the EDA consultant to present options to Xcel Energy for approval in the EDA Enhanced track. Note: if the customer has/will obtain any of these early analyses services from elsewhere, the EDA consultant will not be reimbursed for these early analyses from Xcel Energy.

All analyses' detailed reports will be sent to Xcel Energy within two weeks of completion. Reports must be submitted prior to the FEA stage.

Objectives

EC to completes early analysis in one or more of the following:

1. Massing Analysis
2. Daylighting Analysis
3. HVAC Analysis
4. Lighting Analysis

Objective 1 - Building Massing Analysis

Create and compare alternative massing and orientations to maximize energy efficiency potential. The design team must be willing to consider a minimum of two massing design alternatives in an effort to determine which shape and/or orientation would result in the most energy savings.

A meeting will be held with EC/Design Team where a minimum of two massing designs systems are defined, necessary design details are identified and schedule is defined.

A minimum of two building alternatives will be analyzed by the EC in order to show which shape and or orientation would result in the most energy efficiency. After the analysis is complete, a meeting will be held to discuss the massing results.

Follow-up meetings are addressed as necessary.

Objective 2 - Daylighting Analysis

Create and compare a minimum of three alternative daylighting strategies, including window sizes and placement for daylighting harvesting and sun shading options.

A meeting is held where a minimum of three daylighting strategies are defined, daylighting elements are discussed, schedule is defined, and information about the design and “key spaces” for daylighting are identified.

The EC analyzes optimizing the size and placement of windows, shading devices, interior design elements etc. for beneficial daylighting and passive solar control. After the analysis is complete, a meeting will be held to discuss the daylighting results. Often another meeting is scheduled to detail changes from this results meeting.

Objective 3 - HVAC Analysis

Create and compare a minimum of three alternative HVAC system types and zoning options to maximize energy efficiency.

A meeting is held where a minimum of three HVAC strategies and design systems are defined, necessary design details are identified and schedule is defined.

The preferred HVAC strategy, as determined by the design team, will be further evaluated by the EC. HVAC options will include mechanical zoning, system type, plant equipment, and applicable controls. After the analysis is complete, a meeting will be held to discuss the HVAC results.

Follow-up meetings are addressed as necessary.

Objective 4 – Lighting System Analysis

Create and compare a minimum of three lighting analysis, as bulleted below. The Enhanced lighting analysis provides specific solutions to the team that can increase lighting efficiency beyond what would be normally analyzed in the scope of EDA. While lighting efficiency goals should still be set and discussed early in design, lighting is unique in that many additional efficiency opportunities are not revealed until Design Development, or sometimes even later. As such, the EC seeking to perform an Enhanced Lighting Analysis must carefully review the lighting and controls layout as it develops, from SDs all the way through CDs and often into the submittal phase. All lighting analysis should be accompanied by incremental cost information. Enhanced lighting analysis includes the following:

- Photometric analysis: For spaces that require task light and specific light levels, use a lighting calculation software to provide both vertical and horizontal light levels (footcandles or lux) as necessary to target spaces that may be over-lit. An example of this analysis may include a

photometric analysis of a DD set's parking garage lighting design, comparing to IESNA recommended light levels, and offering an alternative fixture, lamping, ballast, or layout that provides more appropriate light levels and energy savings.

- Light fixture package analysis: Offer specific fixture, lamping, or ballast alternates that provide a more energy efficient design while still meeting the design intent. This should occur as the lighting designer is developing a fixture package. An example of this may include researching and suggesting an LED fixture alternative in place of a CFL fixture, and running photometric calculations to substantiate its equivalency. Another example might be researching and analyzing different lamp-ballast combination alternatives.
- Lighting control package analysis: Review control strategies, device specifications, daylighting zoning, and lighting control intent narrative. Offer specific adjustments to the control package and/or zoning to optimize energy efficiency. An example of this type of analysis may include recommendations on optimal lighting zoning and control type based on the results of the daylighting analysis.
- Architectural lighting analysis: Identify simple architectural changes that would allow for increased lighting efficiency. Architectural changes such as a parking garage painted white or lower partitions in an open office may allow for better lighting efficiency. This analysis should be accompanied by specific lighting layout or fixture recommended changes that will allow the team to achieve these savings.

A meeting is held where a review of architectural elements and/or lighting systems are discussed and schedule is defined.

4.3 Certifications

In general, Xcel Energy will accept 3rd party verified building certifications under the Enhanced track. Xcel Energy will only provide cost support for the energy portions of the certification process. The USGBC LEED process is outlined below as an example. However, for all other certifications, it is the responsibility of the EC to contact Xcel Energy early in the process regarding any other certification that a design team would like to pursue in order to get clarification on what costs Xcel Energy will support.

Proof of certification registration is required by the end of FEA stage.

Leadership in Energy and Environmental Design (LEED)

As part of the EDA-Enhanced process, Xcel Energy supports additional work to satisfy the requirements of the United States Green Building Council (USGBC) and their reviewing body the Green Building Certification Institute (GBCI).

The following notes the additional requirements:

- Additional modeling for USGBC baseline requirements
- Partial documentation to the USGBC for Energy and Atmosphere Prerequisite 2 – EC will complete the portion of the documentation related to energy performance, however, the architect and/or engineer of record will be responsible for the mandatory provisions in the final submission
- Documentation to the USGBC for Energy and Atmosphere Credit 1 for either the Design or Construction submittal AND the opportunity for responses to the Green Building Certification Institute (GBCI) during preliminary and final review

Additionally, in the case of an appeal made to the GBCI, Xcel Energy will review the situation and make decisions regarding payment to the EC based on the following criteria:

- Reasonable questioning by the GBCI
- Questions and details regarding EC calculations and methodology
- Project energy savings

The additional scope of work is noted below:

- Develop an energy model that meets the protocol outlined by the USGBC for EA Credit 1
- Set up a meeting time and location to review the draft results with the Design Team
- If needed, revise the model based on feedback from the draft results meeting and sets another review meeting with the Design Team
- Complete the LEED Templates and associated documentation—for Design or Construction Submittal, not both—required by the GBCI within 2-3 weeks from completion and acceptance by the Design Team of the USGBC-compliant energy model
- Respond to questions from the GBCI regarding EA Credit 1 Template for Final Review
- Send a memo to Xcel Energy regarding completion of LEED scope and/or request for further assistance regarding an Appeal process

5.1 EDA Express Track - Adjusted Process

The intent of the Express Track in the Open EDA path is to create a cost-effective analysis process for projects that fit the following criteria:

- * Are 20,000 to 50,000 SF
- * Are a common building type
- * kWh savings is estimated to be less than 3x the total building square footage.

The Express analysis draws on results from the energy consultant’s previous modeling experience of similar building types and systems to eliminate the Preliminary Energy Analysis (PEA) hourly building simulations of the actual project.

To recommend a project for the Express track, the energy consultant must identify their intended method of calculating annual energy cost savings for the PEA when submitting the introductory report in EDAPT. The energy consultant shall propose and describe the method in the EDAPT “Public Comments” section. Projects recommended for the Express track will be considered on a case by case basis.

In the event that a project is not approved for the Express track, the energy consultant may wish to consider requesting additional funds from the customer.

The following adjustments should be made to the Customer Participation Procedure:

Step 1—Application & Approval

No change from Basic EDA.

Step 2—Introduction

No change from Basic EDA. The EDA consultant will determine whether the Basic, Enhanced, or Express Track is appropriate for the project. Energy savings estimates are required at or before the intro meeting.

If Express is recommended, the energy consultant will include the Express analysis process description in the “Public Comments” section of EDAPT when the Introductory Report is submitted. **Early analysis/certification is not reimbursed for projects under the Express track.**

Step 3—Preliminary Energy Analysis

The intent of this step is to evaluate energy efficiency improvements, and assemble potential whole-building combinations for further analysis.

The Express track differs from the Basic/Enhanced tracks in that an energy model is not necessarily developed at this stage. Instead, efficiency strategies are analyzed by applying results from previous projects and models, or other tools as the energy consultant requires.

Objectives:

1. EC conducts Express Preliminary Energy Analysis (PEA)
 - a. Estimate energy costs and payback periods of measures/design alternatives through analysis and application of previous project experience, applicable existing energy models, or alternate tools. The process will often consist of normalizing previous modeling results on a per-SF basis to apply to the current project. When necessary, additional model runs can be made using existing models.
 - b. Review measure/design alternative costs (incremental construction costs of design alternatives relative to the initial concept design). In many cases, typical payback periods may be used for design alternatives that are commonly implemented.
 - c. Potential KBTU, kW, KWH, and DTH savings do not need to be estimated at this time.
4. Using the template provided in EDAPT, the EC prepares the PEA report. The Express PEA template does not differ from the standard PEA report, except that results may be entered manually rather than automatically through Open Studio. Report information requirements should all be filled out. Tables should still include energy cost savings in dollars and percentages, along with incremental costs and typical payback periods. The report should also include all design alternatives, including “best case” total potential energy cost savings for a high performance building.
5. EC schedules and conducts PEA meeting to review initial results. (No change from Basic/ Enhanced EDA.)

Step 4—Final Energy Analysis

Generally, there is no change from the process outlined in Basic EDA. In the Express Track, however, this is the first time an energy model is developed for the specific project.

Step 5—Measurement and Verification

CD stage – An update to the model is required only if CD review findings differ by more than 10% from the FEA energy design alternative selected by the customer.

Final Field Verification stage - An update to the model is required only if field verification findings differ by more than 10% from the CD final report.

6.1 Tracking/Reporting Requirements

Consultants are required to use the Company’s tracking system “EDAPT” for projects, as well as have their own active database or software system to track project deliverables. All energy models and reports are the property of Xcel Energy and the EC. Xcel Energy may share modeling information with the customer, however will keep information confidential unless a back-up energy modeler is deemed necessary by Xcel Energy (see back-up energy modeling below). EDAPT can act as the system of record, however consultants may be asked to provide additional information as needed monthly.

The following outlines what information is to be tracked, at minimum, for Xcel Energy:

- Project status
- Meetings in process and completed
- Prospective projects
- Program contacts
- Savings results
- Incentives & incremental costs
- Documents
 - Application Form
 - Introductory Meeting Minutes/Report
 - Preliminary Energy Analysis (PEA) Report
 - Final Energy Analysis (FEA) Report
 - Incentive Amounts
 - CD Review Final Report
 - Verification Final Report
- Energy savings (kWh)
- PC_KW
- kW
- Dth
- % Savings (kWh, KW & Dth)
- Design Team
- Energy Consultant; M&V Consultant
- Incremental capital costs
- O&M costs
- Program and track
- Building square footage
- Certifications
- Rebates
- Benefit-cost analysis
- Planning assumptions

These data points are pulled yearly for regulatory filings.

6.1 Yearly End-Use Report

End Use Data:

- Lighting (break into daylighting controls and other lighting strategies)
- Space Cooling
- Space Heating
- Envelope (Insulation and Windows)
- Fan and Pump
- Conditioning of Outside Air
- Service Hot Water (where possible)
- Process/Equipment Loads Including:
 - Motors & Drives
 - Appliance Efficiency
 - Plug Load Strategies
 - Other custom measures

End Use by Categories (and/or listed by project):

- Square foot
- Building type
- Incremental costs
- O&M costs
- Electric / gas

6.2 Special Projects

A stipend for EDA consultants to conduct special projects will be considered on a case by case basis. These may include new technology calculations and processes, writing white papers and case studies, help with trade shows and code reviews. All special project information will be made public for all EDA consultants.

6.3 Marketing/Advertising

Consultants may use existing EDA marketing material created by Xcel Energy and located at: https://www.xcelenergy.com/programs_and_rebates/business_programs_and_rebates/new_construction_and_whole_building/energy_design_assistance (additional information section). Program marketing is directed by Xcel Energy. For all other material, EDA consultants shall not use Xcel Energy's corporate name, trademark, trade name, logo, identity or any affiliation for any reason—including soliciting customers—without Xcel Energy's prior written consent. This shall apply to, but is not limited to: seller proposal forms, envelopes, business cards, vehicle panels, telephone directory listings, trade publications, presentations, advertising, door-to-door fliers, clothing, briefcases, clipboards, billboards and mailings. Please contact Parker Cohn at: Parker.W.Cohn@xcelenergy.com --before using the company name, Xcel Energy, in any promotions.

Consultants may also use Media Bin: <http://www.xemediabin.com/> for the Company's branding standards, as well as a Download Center to can access templates and logos. Use Media Bin to get the approval required for your marketing material prior to use

Consultants may be asked to contribute to program marketing efforts, including contact with design and construction professionals and organizations. Expenses associated with such requested and approved efforts are not reimbursable.

6.4 Back-up Energy Modeling

In the event a modeling company cannot fulfill its modeling obligations within a timely manner, Xcel Energy will assign another EDA consultant to complete the project, at which point all models and files will be open to the assigned back-up consultant.

7.0 Policies

7.1 As-Verified Energy Modeling

Xcel Energy is required to file M&V requirements within our DSM filings. As such, it was determined that an as-verified model need to be run comparing the modeled results to the results identified during onsite verification in all instances.

7.2 Incremental Costs

The incremental cost of the proposed design to the baseline design shall be provided by the EC for every measure or bundle included in the report. Incremental costs are to be supplied by the design team whenever possible. In instances where the design team is unable to supply an incremental cost, the EC may estimate the cost based on historical project information or other sources. In all cases, the source of the incremental cost shall be documented in the project report.

7.3 Hold Status

Projects that have been on hold status for one year will be cancelled by Xcel Energy. An email will be sent letting the customer know the project will be cancelled and how they can reapply if/when the project becomes feasible. If the customer can show reason why the project should not be cancelled in writing, Xcel Energy will re-evaluate.

Exception: Held projects that have already been through the PEA meeting will be held for a maximum of two years and may continue to use the original modeled baseline. In the event the EDA baseline changes, projects on hold (for more than one year) that have not selected a design alternative, will be modeled at the

new baseline requirements.

Note that projects in a holding pattern for more than two years will be canceled and may be directed to prescriptive rebates.

7.4 Phasing

In general, phasing a project's final verification into more than one step is not done, given the increased cost of conducting more than one M&V analysis and site visit. However, there are exceptions in which Xcel Energy may consider a project for phasing on a case by case basis, given these conditions:

Tenant Spaces: Often, office buildings are phased due to the nature of completion. The shell of the building may be completed prior to individual floors as tenants decide the final details of their space or sign a lease. In these cases, if the timeframe between shell completion and 80% tenant occupancy is more than one year Xcel Energy may consider phasing the project; claiming the shell of the building (including all mechanical design) in phase I. Then conducting a second M&V phase once the building is 80% occupied following the below process. The customer would be partially rebated after each phase.

1. One to two site visits are completed to verify the strategies that are implemented in the construction completion of Phase I. Typically at the time of the first visit all of the architectural and mechanical items have been completed and a portion of the electrical items. The amount of the completed electrical items varies for every project.
2. After the first site visit, MVC determines how much of the savings strategies have been installed and prorate the credit based on these figures.
3. A draft for Phase I is sent to the design team for comment. This report details the percentage of the total building that was verified, what the total modeled incentive was (for a 100% completed building), and what incentive is at this time for Phase I. We also explain that another site visit will be conducted after the remaining building is complete and additional savings will be determined.
4. A final Phase I report is sent to the Design Team, Owner and Utility with the same information as the draft.
5. Xcel Energy issues a Phase I incentive
6. After building is at least 80% complete, begin Phase II and add on the additional savings to Phase I.
7. Draft is sent to the Design Team
8. A final Phase II report is sent to the Design Team, Owner and Utility.
9. Xcel issues a Phase II incentive
10. Project is closed.

Phased Construction: When a project completes construction in two subsequent years, the project may be phased for incentives. If the phases occur within one year, Xcel Energy will wait until the final phase is completed prior to verification.

7.5 Building Design Prototypes to Be Used At Multiple Locations

- Customers with multiple locations who use a standard design prototype for multiple projects may be eligible for all services offered through the EDA approach for the initial project. All subsequent projects constructed using that design will be eligible for the EDA final verification stage only and will not be eligible for the Design Team incentive. If the weather file is different for the various locations, then the energy model shall be run using the respective weather file to get revised results.

- If the design of subsequent projects differs more than 15% from the original building model in square footage, or if HVAC and lighting systems differ, then one energy model should be run at the construction documentation stage. A final site verification will be conducted.

7.6 On-Site Verification

Site visit 1 - Shortly after construction completion, resolution of related commissioning items, and occupancy¹¹ (exceptions are made for certain building types such as jails, retail or hospitals), the M&V Consultant shall visit the project site and verify that specified measures were installed and functioning. Reasonable effort will be made to allow the Customer to repair measures that are found to be not functional before verification is complete. Dataloggers can be placed during site visit 1, but monitoring should begin (data loggers activated) after approximately 2 months after at least 80% occupancy¹².

Site visit 2 – A second site visit will be conducted to verify equipment installation and operation (if not fully completed in site visit 1 due to equipment not operating or installed at time), and to remove dataloggers.

Monitoring/datalogging:

Selected equipment and systems are monitored for a two-four week timeframe, as appropriate, to evaluate performance variables against modeling assumptions.

Monitoring should begin approximately 2 months after occupancy.

For projects where **individual measures** that have savings greater than or equal to 1.0 GWh or 20,000 Dth per year, data logging is required for a time period of four weeks. Less than 1.0 GWh or 20,000 Dth per year, data logging is required for a two week time period.

Verified results:

Verify the operational hours with the design team. Provide the assumed modeled operation hours along with the verified operational hours prior to completing the verification.

The verified results shall be used to adjust the estimated savings to determine the final rebate.

7.7 Energy Design Assistance and Xcel Energy's Recommissioning program

Projects that have gone through the EDA program are eligible to go through Xcel Energy's Recommissioning program, however, the following rules must apply:

- Building project must have gone through EDA at least a year prior
- Final Recommissioning report will be analyzed in comparison to the EDA report. Rebates will not be offered for measures that were previously rebated.
- Pre-approval for this type of Recommissioning study will consider savings already established in the building prior to the investigation. Savings estimates that seem higher than savings established will be reviewed. Applications for these buildings will require a higher level of detail from the vendor; a higher level of specificity on potential opportunities will be expected to guard against possible overlap.
- The Xcel Energy EDA project history will be pulled before preapproval.

¹¹ This process allows for site visit 1 to be held closer to construction completion and occupancy to give design teams and controls contractors more time to fix problems for optimized strategies. Consultant will still complete full 2-4 weeks of data logging and determine any major changes affecting the project and/or Xcel Energy's goals.

¹² At least 80% occupancy is required because certain measures operate at maximum energy consumption based on occupants. Example- Laboratory fume hoods.

Appendix A – Overview of EDA tasks/steps

| Task | Deliverable | Timeline |
|--|---|--|
| Introductory Meeting | Schedule meeting Intro Meeting (A representative from the Company must be in attendance.) Conduct Introductory Meeting Work with team to decide whether the basic or enhanced track is appropriate Prepare Introductory Report using EDAPT Complete Intro Report using EDAPT | 2 weeks from application acceptance by Company |
| Enhanced Analysis (if Enhanced track approved for project) | Where appropriate: Goal setting meeting Massing, daylighting, lighting, HVAC systems analysis (see Appendix A for details) Certification analysis Send analyses report(s) to Company | 4-5 weeks after introductory meeting, latest |
| Preliminary Energy Analysis | Conduct preliminary energy analysis (PEA) in Energy Plus/OpenStudio Prepare PEA report using EDAPT Schedule and conduct PEA meeting | 4-5 weeks after introductory meeting (later if enhanced track) |
| Final Energy Analysis | Conduct final energy analysis (FEA) with identified design alternatives in Energy Plus/OpenStudio Prepare FEA report using EDAPT Conduct FEA meeting Select final design alternative decision by customer. Prepare design alternative list for CD review | 6-8 weeks after introductory meeting (later if enhanced track) |
| Construction Document Review | Review CDs and check for all measures provided in selected design alternative Prepare design alternative list for final verification site visit Update model with results from the M&V consultant CD review Provide proof of certification registration (Enhanced track only) Complete CD report using EDAPT; get approval from Company | As soon as a For-Construction set is available |
| Final Field Verification | Conduct site verification (M&V consultant) Complete as-built model with verification results Complete verification report using EDAPT; get approval from Company. Send approved report to customer | At 80% occupancy rate or more |

