$PROJECT\_NAME$
$PROJECT\_LOCATION$

Xcel Energy’s Energy Design Assistance Program

$REPORT\_TYPE$

$DATE$

**Prepared for:**

$CLIENT\_NAME$

$CLIENT\_BUSINESS\_NAME$

$CLIENT\_ADDRESS$

$CLIENT\_PHONE$

$CLIENT\_EMAIL$

**Prepared by:**



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Energy Design Assistance Program Process & Timeline

Xcel Energy’s Energy Design Assistance (EDA) process is designed to assist the Owner and Design Team in making decisions concerning energy-efficiency measures for the project. The main steps are:

|  |  |  |
| --- | --- | --- |
| **Construction stage****(ESTIMATE)** | ENERGY DESIGN ASSISTANCE STATE | **DATE** |
| **aPPLICaTIon****Design phase** | Step 1: APPLICATIONComplete applicationXcel Energy accept/reject of application | **$APPROVAL\_DATE$** |
| **PRE/EARLY SCHEMATIC DESIGN PHASE** | Step 2: INTRODUCTIONIntroductory meeting* EDA Program overview
* Energy efficiency measure discussion

Begin collection of building and incremental cost dataEnergy Consultant (EC) submits introductory report | **$INTRO\_DATE$** |
| **Schematic Design phase** | Step 3: PRELIMINARY ENERGY ANALYSIS (PEA)Early massing, HVAC, daylighting (Enhanced Track only)Preliminary energy analysis meeting* Review of analysis results in PEA report
* Selection of measures to be included in final energy analysis

EC submits PEA report | **$ PEA\_DATE $** |
| SD completion |  |
| **Design Development phase** | Step 4: FINAL ENERGY ANALYSIS (FEA)Final energy analysis meeting* Review of updated whole building analysis in FEA report
* Review of program incentives
* Introduction to verification process

Customer selects an energy design alternative, showing an intent to move forward with selected measuresEC submits FEA report | **$BUNDLE\_DATE$** |
| DD completion |  |
| **Construction Document phase** | Step 5: CONSTRUCTION DOCUMENT (CD)Customer sends final design CDs to Measurement & Verification Company (MVC)**Measurement & Verification Company:*** Confirms measures included in final design documents.
* Sends to EC to update model

 **Energy Consultant:*** Submits CD report with updated model results and incentive
* EC complete green certification docs (Enhanced Track only)

Design team completes documentation for fee reimbursement | **$CD\_DATE$** |
| **CD Completion** |  |
| **Construction** | **Construction Occurs. Estimated construction completion date** |  |
| **Construction ends** |  |
| **Post-Occupancy** | MVC conducts on-site measurement and verification. Sends M&V results to EC to update modelEC submits M&V report with updated model results and incentiveEDA project complete. | **$MV\_DATE$** |
| **Incentive payment to customer is received approximately two months post-verification** |

Xcel Energy, through the Energy Design Assistance program, has qualified energy consultants to provide our customers with a service that includes an integrated design process. This integration includes using an energy model to compare building energy scenarios and estimate energy savings. The energy model itself is an instrument to project results and review different energy efficiency opportunities. The results of these models belong to Xcel Energy and their customers as participants through the Energy Design Assistance program.

Xcel Energy customers participating in the Energy Design Assistance program may distribute the results of their model to anyone they choose.  Xcel Energy will not release this information unless written permission from the customer has been obtained.  As a result of this permission, two reports will be provided: the Preliminary Energy Analysis Report and the Final Energy Analysis Report. Xcel Energy also cautions the use of these reports; data is based on an analysis done for a specific time frame.  Buildings naturally adjust as occupancy reaches its full potential, causing variations from pre-construction data.

Project Summary

|  |  |
| --- | --- |
| **Project Name** | **$PIF\_PROJECT\_NAME$** |
| Xcel Energy Project # | $XPF\_XCEL\_PROJECT\_NUMBER$ |
| Location | $PROJECT\_LOCATION$ |
| Building Type | $PIF\_BUILDING\_TYPE$ |
| Conditioned Floor Area | $PIF\_FLOOR\_AREA\_CONDITIONED$ |
| Unconditioned Floor Area | $PIF\_FLOOR\_AREA\_UNCON$ |
| Above-Grade Stories | $PIF\_STORIES\_ABOVE\_GRADE$ |
| Below-Grade Stories | $PIF\_STORIES\_BELOW\_GRADE$ |
| Electricity Provided by Xcel | $APP\_BOOLEAN\_ELECTRICITY$ |
| Natural Gas Provided by Xcel | $APP\_BOOLEAN\_GAS$ |
| District Heating Gas Provided by Xcel | $APP\_BOOLEAN\_DH$ |
| District Cooling Electricity Provided by Xcel | $APP\_BOOLEAN\_DC$ |
| EDA Baseline | $RULE\_BASELINE$ |
| Track (Basic, Express or Enhanced) | $PIF\_TRACK$ |
| Certification (Enhanced Only) | $APP\_CERTIFICATION\_GOAL$  |
| Early Analysis (Enhanced Only) | $PIF\_EARLY\_ANALYSIS$ |
| Estimated Savings (vs. baseline) |  |
|  Demand (kW) | $ESTIMATED\_KW$ |
|  Energy (kWh) | $ESTIMATED\_KWH$ |
|  Gas (Dth) | $ESTIMATED\_DTH$ |
| Estimated Construction Completion Date | $PIF\_COMPLETION\_DATE\_ESTIMATE$ |
| Estimated 80% Occupancy Date | $PIF\_OCCUPANCY\_DATE\_ESTIMATE$ |
| Estimated Verification Date | $PIF\_VERIFICATION\_DATE\_ESTIMATE$ |

|  |
| --- |
| **Customer incentive calculations are based on the following dollar amounts** |
|  Demand ($/kW) | $ $RULE\_ELEC\_DEMAND\_INCENTIVE$ |
|  Energy ($/kWh) | $ $RULE\_ELEC\_ENERGY\_INCENTIVE$ |
|  Gas ($/Dth) | $ $RULE\_GAS\_ENERGY\_INCENTIVE$ |

Project Participants

Project participants at the meeting included:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Company | Role | E-Mail | Phone | In Attendance |
| $CONTACT\_NAME$ | $CONTACT\_COMPANY$ | $CONTACT\_ROLE$ | $CONTACT\_EMAIL$ | $CONTACT\_PHONE$ |  |

Measurement and Verification Summary

Measurement and verification (M&V) activities are performed as part of Xcel Energy’s Energy Design Assistance (EDA) program to verify installation/operation of the project energy efficiency measures (measures) included in the final design as represented in the Construction Documents. The inclusion of the measures reduces peak summer demand and energy consumption compared to a baseline design. Through the EDA program, financial incentives are provided to the customer based on peak demand savings, energy savings and natural gas savings. Thus, M&V determines if the incentives anticipated for the project based on the as-designed building are valid for the as-built building. If a significant discrepancy exists, the energy model is updated to reflect as-built conditions and the incentives are recalculated based on the new savings results.

This report presents a summary of the measurement and verification (M&V) findings for the project. Through M&V activities, the presence of the measures is verified and their potential to save is determined. The M&V findings are based on drawing reviews, construction submittals, visual inspections, site survey data, spot measurements and/or short term monitoring. The specific M&V approach followed for the measures integrated into this project are detailed in this report. The schedule of activities is shown in the following table.

Table ‑ Schedule of M&V Activities

|  |  |
| --- | --- |
| M&V Activity | Date |
| CD review | $CD\_DATE$ |
| On-site verification | $MV1\_DATE$ |
| Installation date of monitoring equipment | $EQUIP\_INSTALL\_DATE$ |
| Removal date of monitoring equipment | $EQUIP\_REMOVAL\_DATE$ |

## As-Built Measures Economic Summary

The new construction/renovation work has been completed by XXX, on behalf of Xcel Energy, and has verified the as-built condition of all efficiency measures that were pursued. The following table details annual energy cost savings for the verified efficiency measures relative to the $RULE\_BASELINE$ (modified) baseline model, along with the related incremental construction cost. A simple payback period was calculated taking into consideration reduced incremental cost due to incentives from Xcel Energy.

Table ‑ Final Predicted Energy Efficiency Measure Simple Payback Analysis

|  |  |
| --- | --- |
| Incremental construction cost | $ENERGY\_0$ |
| Xcel Energy incentive\* | $ENERGY\_1$ |
| Adjusted incremental construction cost | $ENERGY\_2$ |
| Annual energy cost savings | $ENERGY\_3$ |
| Payback with incentive (in years) | $ENERGY\_4$ years |

\*This incentive is calculated using un-rounded energy modeling results.

Changes to the Model from CD Report

The following changes were made to the model since the CD report:

* Description of change to the EDA Baseline Model and reason for change

# Measures Included in the Final Design

The Selected Design Alternative included the following measures:

Download the completed M&V report table from EDAPT and paste here.

# Documentation of Verification Process by Measure

Download the completed M&V report table from EDAPT and paste here.

# Verification of Hours Used Within the Model

Details and discussion

#  As-Verified Results

Table ‑ Summary of Financial Impact vs. Proposed Baseline

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ID | Alternative | EnergyCost ($) | Energy CostSavings($)1 | Total % Energy Cost Savings(%)2 | Incremental CapitalCost ($)3 | Incentive ($)4 | Simple Payback(years)5 |
| $S\_CB\_ID$ | $S\_CB\_NAME$ | $$S\_CB\_COST$ | $$S\_CB\_SVG$ | $S\_CB\_SVGP$ | $$S\_CB\_ICC$ | $$S\_CB\_INCENT$ | $S\_CB\_SP$ |

1. Energy Cost Savings = Energy CostProposed Baseline – Energy CostAlternative
2. Total % Energy Cost Savings = (Energy CostEDA Baseline – Energy CostAlternative)/Energy CostEDA Baseline
3. Incremental Capital Cost = Capital CostAlternative – Capital CostProposed Baseline
4. Incentive calculated using un-rounded energy modeling results.  Because of rounding error, hand-calculation may be off by up to $1.
5. Simple Payback = ((Capital CostAlternative – Capital CostProposed Baseline )-(IncentiveAlternative –IncentiveProposed Baseline))/(Energy CostProposed Baseline – Energy CostAlternative)

Table 4‑ Summary of Savings vs. EDA Baseline

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ID | Alternative | PeakDemand (kW) | Electric Consumption (kWh) | Natural Gas Consumption (Dth) | Peak Demand Savings (kW)1 | Electric Consumption Savings(kWh)1 | Natural Gas Savings (Dth)1 |
| $S\_EB\_ID$ | $S\_EB\_NAME$ | $S\_EB\_PD$ | $S\_EB\_EC$ | $S\_EB\_GC$ | $S\_EB\_PDS$ | $S\_EB\_ECS$ | $S\_EB\_GCS$ |

1. Savings relative to EDA Baseline

Table ‑ LEED Summary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ID | Alternative | EnergyCost ($) | LEED EnergyCost Savings ($)1 | LEED Energy Cost Savings (%)1 | LEED Points2  |
| $S\_LB\_ID$ | $S\_LB\_NAME$ | $$S\_LB\_COST$ | $$S\_LB\_SVG$ | $S\_LB\_SVGP$ | $S\_LB\_LP$ |

1. Savings relative to LEED Baseline
2. Based on LEED Version $LEED\_VERSION$

# Results by Individual Measure

Table ‑ Results by Individual Measure - Annual Savings vs. Proposed Baseline

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ID | Measure | EnergyCost ($) | Energy CostSavings($)1 | Total % Energy Cost Savings(%)2 | Incremental CapitalCost ($)3 | Simple Payback(years)4 |
| $M\_ID$ | $M\_NAME$ | $$M\_COST$ | $$M\_SVG$ | $M\_SVGP$ | $$M\_ICC$ | $M\_SP$ |

# Early Analysis

Describe the types of early analysis performed, the outcome of discussing these results with the design team and customer, and the modeling results as compared to an EDA baseline.

1. Modeling Inputs and Assumptions

Show summary info about models. Format is up to the Energy Consultant. Generally good practice to point out differences between the EDA Baseline, Proposed Baseline, and LEED Baseline.

* 1. Location and Climate Data

Summary Info

* 1. Utility Rates

Summary Info

* 1. Building Envelope Model Inputs

Summary Info

* 1. Lighting and Internal Load Inputs

Summary Info

* 1. HVAC & DHW Inputs

Summary Info

1. Modeling Results Summary
	1. Master Results Table – Design Alternatives and Individual Measures

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ID | Measure | EnergyCost ($) | ElectricityCost($) | GasCost($) | DistrictHeatingCost($) | DistrictCoolingCost($) | OtherEnergyCost($) | ProposedBaselineEnergy Cost Savings($)1 | EDABaselineEnergy Cost Savings($)2 | LEED BaselineEnergy CostSavings($)3 | LEED Points4 | PeakDemand (kW) | Electric Consumption (kWh) | Natural Gas Consumption (Dth) | Peak Demand Savings(kW)5 | ElectricConsumption Savings(kWh)5 | Natural Gas Savings (Dth)5 | EUIReduction(kBtu/ft2-yr)5 | IncrementalCapitalCost ($)6 | Simple Payback(years)7 |
| $MR\_ID$ | $MR\_NAME$ | $$MR\_COST$ | $$MR\_ELEC\_COST$ | $$MR\_GAS\_COST$ | $$MR\_DH\_COST$ | $$MR\_DC\_COST$ | $$MR\_O\_COST$ | $$MR\_CB\_SVG$ | $$MR\_EB\_SVG$ | $$MR\_LB\_SVG$ | $MR\_LP$ | $MR\_PD$ | $MR\_EC$ | $MR\_GC$ | $MR\_PDS$ | $MR\_ECS$ | $MR\_GCS$ | $MR\_EUI\_R$ | $$MR\_ICC$ | $MR\_SP$ |

1. Proposed Baseline Energy Cost Savings = Energy CostProposed Baseline – Energy CostMeasure
2. EDA Energy Cost Savings = Energy CostEDA Baseline – Energy CostMeasure
3. LEED Energy Cost Savings = Energy CostLEED Baseline – Energy CostMeasure
4. Based on LEED Version XYZ
5. Energy, Demand, and EUI Savings relative to EDA Baseline
6. Incremental Capital Cost = Capital CostMeasure – Capital CostProposed Baseline
7. Simple Payback = (Capital CostMeasure – Capital CostProposed Baseline)/(Energy CostProposed Baseline – Energy CostMeasure)