



Guidance for design teams using Utility Design Assistance New Construction Programs while pursuing the Sustainable Buildings 2030 (SB 2030) Energy Standard

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SB 2030 Overview

Sustainable Building 2030 (SB 2030) was established by the Minnesota Legislature in 2008 – its purpose was to establish cost effective, energy efficiency performance standards that could be integrated into the existing B3 Guidelines (formerly known as the Minnesota Sustainable Building Guidelines or MSBG). SB 2030 provides customized, verifiable performance targets for energy use in buildings in the spirit of the Architecture 2030 Challenge. While buildings that receive state general obligation bond funds are required to use SB 2030, it has also been incorporated into the requirements for projects funded by several other organizations and municipalities.

As part of the SB 2030 process, a customized Energy Standard is created in the form of a maximum Energy Use Intensity (EUI) in kBtu/sqft/yr. The predicted and operational energy use from the design of the building cannot exceed this EUI (with some tolerance based on the phase of the design, please see www.b3mn.org for more details). This custom Energy Standard is created by entering building information such as program type, hours of operation, number of floors, square footage, and other characteristics into the SB 2030 Energy Standard tool accessible in the online B3 Guidelines Tracking system under guideline E.1.C. The SB 2030 Energy Standard can be adjusted during the design process if the building or use pattern of the building changes (e.g., if the building is occupied for more hours a day). During the design phases, the project team reports expected energy performance data based on building energy simulation results to demonstrate how the building's performance is expected to compare to the SB 2030 Energy Standard. If the constructed building's energy use exceeds the SB 2030 Energy Standard during operation, there is a requirement for corrective action.

SB 2030 provides expert review of project design information to ensure that the building is capable of having energy performance that meets the SB 2030 Energy Standard. The Schematic Design (SD), Design Documents (DD) and Construction Documents (CD) phase submissions are subject to this review. Each stage's review determines if the project is compliant and can move to the next phase or if the project team needs to submit additional information or make updates to provide consistency between the design, the Energy Standard Tool inputs, and the design simulation. Generally, project teams have found that effort early in the design process enables the SB 2030 Energy Standard to be met more cost-effectively than pursuing changes later in the design.

SB 2030 also has an Alternative Path Method for the minority of projects with special circumstances that make it impossible to meet the SB 2030 Energy Standard cost-effectively. In such cases, the project team must both incorporate all reasonable, applicable energy design features with an energy cost savings payback of 15 years or less and provide significant documentation beyond what is normally needed for SB 2030 review. More details on the Alternative Path and calculation requirements can be found at <http://www.b3mn.org/2030energystandard/>. If you have a building that you believe may need to use the Alternative Path Method, please notify SB2030 Support at (sb2030@b3mn.org) as early as possible. Project teams must notify the SB2030 Review team of an anticipated Alternative Path Method request by the project's SD end date.

Utility Program Overview

As of January 2014, three utilities in the State of Minnesota provide active support for projects pursuing SB 2030 approval.

The Energy Design Assistance (EDA) program is sponsored by Xcel Energy. It offers design assistance to qualifying projects, including incentives to support the choosing of cost-effective energy savings technology. There are some eligibility restrictions based on phase of the design process and minimum project size. Xcel Energy provides electric service on all EDA projects, and gas service on some of their EDA projects. Details on service territory and the program can be found at <http://www.xcelenergy.com/>.

Otter Tail Power offers the Commercial Design Assistance program to qualifying projects in their electric service territory.

CenterPoint Energy provides support to projects which are eligible for either the Xcel Energy or Otter Tail Power programs, as long as those projects will be CenterPoint Energy retail gas customers. Gas incentives are added to the electric incentives provided by either Xcel Energy or Otter Tail Power.

The process for each of these programs typically consists of several team meetings in which a list of potential energy savings strategies are created. The incremental cost and benefit (in both energy units and cost savings) for each of these strategies is estimated, and the design team chooses several “bundles” of these energy savings strategies in order to find a set that meets their criteria. Each of these “bundles” is modeled to determine the aggregate (whole building) incremental cost, annual energy savings and annual energy cost savings of the entire bundle. Incentives are developed for each bundle option. After construction, the program provides verification that selected strategies are installed in the project.

Utility Program & SB 2030 Synergy

All projects that are accepted into one of the utility programs noted above receive information about the SB 2030 program. Projects attempting to meet the Minnesota SB 2030 Energy Standard may wish to use information provided through these programs to assist in the design process and in meeting the documentation requirements. To receive formal support through the utility programs, including assistance with SB 2030 compliance documentation, participants need to be accepted into the Enhanced track of the programs. The Enhanced track has specific eligibility requirements, which include early design phase application approval (early schematic design) and formal registration of their SB 2030 intentions on the SB 2030 website. Project teams may still be able to satisfy the requirements of SB 2030 if they are enrolled in the regular (not-Enhanced) track of a utility program, but these teams will generally have obligations of analysis and documentation which would not be covered by the utility program. Generally project teams have used information provided from these programs to identify potential strategies to comply with the SB 2030 program, to choose those strategies, and to document that the design of their project can be expected to meet the SB 2030 Standard. Information provided during the process of participating in these utility programs is often adequate for determining and documenting the design energy performance and cost effectiveness criteria as they relate to SB 2030.

Although the documentation provided through the Enhanced track of these utility programs may satisfy the SB 2030 documentation requirements, the assistance available as part of such a program **does not ensure that the building will meet the SB 2030 Energy Standard.**

During the process, project teams should request that at least one bundle is created in compliance with the SB 2030 Energy Standard to demonstrate what strategies will need to be incorporated to meet the SB 2030 Energy Standard. This bundle could be called the “SB 2030 Bundle.”

While the utility program simulations and documentation have often been adequate for SB 2030 review and approval, it should be noted that it is not always the case. The primary goal of the utility programs is to provide design teams with information in early design when energy saving design decisions are made and when significant changes are still possible. This early design simulation is therefore based on preliminary project design information and is necessarily based on assumptions about a number of details that impact energy use (e.g. equipment control logic, number and zoning of HVAC units, and the combination of duct system static pressure and fan efficiency). A project’s final design sometimes has enough differences from the preliminary design and assumptions that the earlier simulations do not adequately represent the final designs expected energy performance. In such cases, the additional services of updated simulation and submittal may not be covered by the utility program.

Teams who believe that their project will need and qualify to use the SB 2030 Alternative Path Method may wish to use information from their utility program analysis to demonstrate compliance and to provide the required cost-effectiveness calculations. However, the information from the utility documentation may be not sufficient to determine compliance. As soon as it is suspected that the project will not meet the SB 2030 Energy Standard, the project team should notify SB 2030 Support (sb2030@b3mn.org) to ensure that all appropriate strategies are evaluated early enough to avoid more costly and problematic late-stage design changes. Project teams applying for a cost-adjusted standard may be requested at the discretion of the review team to provide additional evaluation and documentation of additional energy efficiency strategies. This additional effort may fall outside of the scope of the utility programs, and information related to strategies not considered as part of the utility programs may be requested. The reviewers will be verifying that all reasonable efficiency strategies that could be incorporated into the building are investigated and that appropriate cost information is provided.

Although it does not supplant the design team’s primary responsibility for ensuring that a project meets the SB 2030 requirements for energy efficient design and program submittals, the utility programs are a valuable resource for design and development teams that are pursuing the SB 2030 Energy Standard. Besides helping the team select an optimal combination of design options that meets or exceeds the SB 2030 Energy Standard, the programs often provide most of the documentation and tracking tool updates.