

DECISION

**BEFORE THE COMMISSIONER OF THE
MINNESOTA DEPARTMENT OF COMMERCE**

GRACE ARNOLD, COMMISSIONER

Decision

In the Matter of Technical Guidance for the Inclusion of Efficient Fuel-Switching, Load Management, and Pre-Weatherization Measures in CIP

Issue Date: March 15, 2022

Docket No. E,G999/CIP-21-837

I. PROCEDURAL HISTORY

On November 2, 2021, the Minnesota Department of Commerce, Division of Energy Resources (Department) convened a virtual stakeholder meeting to discuss major changes to the Conservation Improvement Program (CIP) contained in the Minnesota Energy Conservation and Optimization Act of 2021 (ECO Act).¹

On November 10, 2021, the Department convened a Coordinating Committee consisting of stakeholders interested in assisting the Department in developing technical guidance related to the implementation of the ECO Act's statutory requirements. This committee was then divided into three topic-specific working groups as follows: 1) Electric vehicle charging sales; 2) Efficient fuel-switching; and 3) Load management.

On November 23 and December 8, 2021, and on January 13, 2022, the Department hosted efficient fuel-switching working group meetings to discuss stakeholder views on efficient fuel-switching methodology and assumptions. Working group meeting slides, notes, and comments are available on a public web page.²

On November 30, 2021, and January 28, 2022, the Department hosted load management working group meetings to discuss stakeholder views on load management methodology and assumptions. Working group meeting slides, notes, and comments are available on a public web page.³

On February 18, 2022, Staff of the Minnesota Department of Commerce, Division of Energy Resources (Staff) filed their Proposal Filing (Proposal). The Proposal contained Staff's recommended technical guidance concerning the Inclusion of efficient fuel-switching and load management programs in CIP, and eligible pre-weatherization measures for low-income programs.

¹ [Minnesota Energy Conservation and Optimization Act of 2021](#)

² [At Energy Conservation and Optimization \(ECO\) Act Implementation Web Page | The Mendota Group, LLC and MN ECO Act Coordinating Committee - Home \(sharepoint.com\).](#)

³ *Id.*

On March 4, 2022, the Department received comments on Staff's Proposal from Minnesota Rural Electric Association (MREA), Energy Cents Coalition (ECC), Minnesota Power, Minnesota Energy Resources Corporation (MERC), Center for Energy and Environment (CEE), Great River Energy (GRE), Xcel Energy (Xcel), CenterPoint Energy (CenterPoint), Ceres Energy Optimization Workgroup (Ceres), Otter Tail Power Company (OTP), Fresh Energy, jointly filed by Fresh Energy, Natural Resources Defense Council (NRDC), Minnesota Housing Partnership (MHP) and Community Stabilization Project (CSP) (collectively "Joint Filers"), Martin Kushler on behalf of CEE and American Council for an Energy Efficient Economy (ACEEE), and NRDC.⁴

⁴ Organizations are listed in chronological order that written comments were posted on eDockets.

Table of Contents

- I. PROCEDURAL HISTORY..... 1
- II. BACKGROUND 4
- III. TECHNICAL GUIDANCE TO DETERMINE IF A FUEL SWITCHING IMPROVEMENT MEETS THE REQUIRED CRITERIA AND TO CALCULATE ENERGY SAVINGS 6
 - A. *Efficient Fuel-Switching Technical Guidance Decision Key Findings* 6
 - B. *Comments in Response to Staff’s Proposed Technical Guidance to Determine if an Efficient Fuel-Switching Improvement Meets Required Criteria and to Calculate Associated Energy Savings* 10
- IV. TECHNICAL GUIDANCE TO DETERMINE IF A LOAD MANAGEMENT MEASURE MEETS NECESSARY COST-EFFECTIVENESS REQUIREMENTS..... 23
 - A. *Comments Regarding Cost-effective Load Management Programs*..... 25
- V. PROPOSED LIST OF PREWEATHERIZATION MEASURES ELIGIBLE FOR INCLUSION IN LOW-INCOME ENERGY CONSERVATION PROGRAMS. 26
 - A. *Comments Regarding Prewetherization Measures Being Eligible for Inclusion in Low-income Programs when “Delivered in Conjunction with the Federal Weatherization Assistance Program”* 27
 - B. *Comments Regarding the Proposed List of Prewetherization Measures*..... 28
 - C. *Additional Comments Regarding Prewetherization Measures*..... 29
- VI. DECISION 31
- APPENDIX A: TECHNICAL GUIDANCE TO DETERMINE IF AN EFFICIENT FUEL-SWITCHING IMPROVEMENT MEETS REQUIRED CRITERIA AND TO CALCULATE ASSOCIATED ENERGY SAVINGS 36
 - A. *Statutory Summary* 36
 - B. *Process for Qualifying, Evaluating and Reporting Efficient Fuel-Switching Measures* 38
 - C. *Additional Considerations* 46

II. BACKGROUND

The Minnesota Energy Conservation and Optimization Act of 2021 (ECO Act) was signed into law by Governor Tim Walz on May 25, 2021, and was enacted the next day.⁵ The ECO Act primarily serves to modernize Minnesota's Conservation Improvement Program (CIP) to provide a more holistic approach to energy efficiency programming. The ECO Act was the result of multiple years of stakeholder discussion and development. Notable highlights of the ECO Act include: providing participating electric and natural gas utilities the opportunity to optimize energy use and delivery through the inclusion of load management⁶ and efficient fuel switching programs;⁷ raising the energy savings goals for the state's electric investor owned utilities (IOUs);⁸ more than doubling the low-income spending requirement for all IOUs;⁹ providing greater planning flexibility for participating municipal and cooperative utilities (COUs);¹⁰ and including activities to improve energy efficiency for public schools.¹¹

Given the significance and complexity of some of the changes brought about by the ECO Act, the legislation instructs the Department to work with stakeholders to develop guidance in the following matters:

- Multifamily Buildings – Guidelines for utilities to use to determine the eligibility of multifamily buildings to participate in CIP low-income programs.¹²
- Electric Vehicle Charging Sales – Methodology and assumptions to determine electric vehicle charging sales that are not to be included in a utility's gross annual retail energy sales.¹³
- Efficient Fuel Switching – Technical guidelines for utilities to use to determine if a fuel-switching improvement meets the necessary criteria and to calculate the amount of energy saved.¹⁴

Stakeholder Engagement

As noted in the Proposal, Staff consulted extensively with interested stakeholders prior to the filing of this Decision. On November 2, 2021, the Department convened a virtual stakeholder meeting, outlining major changes to CIP contained in the ECO Act, a stakeholder engagement plan, and detailed next steps in the development of ECO Act related technical guidance. On November 10, 2021, the Department convened a Coordinating Committee consisting of stakeholders interested in assisting the Department in developing technical guidance. This committee was then divided into three topic-specific working groups as follows: 1) Electric vehicle charging sales; 2) Efficient fuel-switching (EFS); and 3) Load management. These working

⁵ [Minnesota Energy Conservation and Optimization Act of 2021](#)

⁶ See Minn. Stat. § 216B.241, subd. 13.

⁷ See Minn. Stat. § 216B.2403, subd. 8.

⁸ Minn. Stat. § 216B.241, subd. 1c(b).

⁹ Minn. Stat. § 216B.241, subd. 7(a).

¹⁰ Minn. Stat. § 216B.2403, subd. 3.

¹¹ See Minn. Stat. §§ 216B.2403, subd 3(j) and 216B.241, subd. 2(i).

¹² See Minn. Stat. § 216B.2403, subd. 5(e). Documents associated with these guidelines are filed separately at docket # 22-41 and followed the same development and review schedule as those covered in this document.

¹³ Minn. Stat. § 216B.2402, subd. 10(3). Final technical guidance for electric vehicle charging sales methodology was filed on December 30, 2021 at docket # 21-837.

¹⁴ Minn. Stat. § 216B.241 subd. 1d(e).

groups met several times and had a series of informal comment periods to discuss applicable technical guidance issues and possible recommendations for Staff to consider in the development of their proposal. Meeting notes and slides were posted to a dedicated SharePoint site and to the ECO Act Implementation process web site.¹⁵ The Commissioner joins Staff in thanking stakeholders for their work and input into the process to date. The Commissioner would also like to acknowledge the valuable assistance received from The Mendota Group in the coordination and facilitation of the stakeholder engagement process and in the development of this Decision.

Decision Scope

This Decision contains technical guidance to determine if a fuel switching improvement meets required statutory criteria and to calculate energy savings associated with such an improvement. Though not required by statute, this Decision also provides technical guidance for the implementation of cost-effective load management programs as described in Minn. Stat. § 216B.241, subd. 13. Further, in accordance with Minn. Stat. §§ 216B.2403, subd. 5(g) and 216B.241, subd. 7(g), this Decision includes a list of preweatherization measures eligible for inclusion in low-income energy conservation programs.

Technical Guidance as a Starting Point

The Commissioner agrees with Staff that “the purpose of this technical guidance is to provide a starting point for utilities to begin implementing programs that include EFS, load management, and preweatherization measures.”¹⁶ The Commissioner acknowledges the significance and complexity of some of the changes brought about by the ECO Act and believes that components of the methodologies contained in this Proposal will require further development and refinement in the coming months and years through the work of the Technical Reference Manual Advisory Committee (TRMAC) and the Cost-effectiveness Advisory Committee (CAC). The Commissioner agrees with Staff that initial utility programs including these types of measures will provide valuable information to inform future iterations of these methodologies.

Municipal and Cooperative Utilities (COUs)

The Commissioner agrees with Staff that “COUs will be uniquely challenged in using this guidance”¹⁷ given that CIP plans for 2023 are due in the coming months. Staff, therefore, are instructed to prioritize support for COUs who intend to include EFS and load management programs in the next CIP planning cycle. Details concerning Department support for COUs developing EFS programs for inclusion in 2023 plans can be found in the EFS section of this Decision.

Response to Stakeholder Comments

By the end of the comment period on March 4, 2022, the Department received comments on Staff’s Proposal from Minnesota Rural Electric Association (MREA), Energy Cents Coalition (ECC), Minnesota Power, Minnesota Energy Resources Corporation (MERC), Center for Energy and Environment (CEE), Great River Energy (GRE), Xcel Energy (Xcel), CenterPoint Energy (CenterPoint), Ceres Energy Optimization Workgroup (Ceres), Otter Tail Power Company (OTP), Fresh Energy, a joint filing by Fresh Energy, Natural Resources Defense Council (NRDC), Minnesota Housing Partnership (MHP) and

¹⁵ <https://mendotagroup.com/eco-act-implementation/>

¹⁶ Staff’s Proposal at 4.

¹⁷ Staff’s Proposal at 4.

Community Stabilization Project (CSP) (collectively “Joint Filers”), Martin Kushler on behalf of CEE and the American Council for an Energy Efficient Economy (ACEEE), and NRDC.¹⁸

The Commissioner thanks those organizations who participated in the EFS and Load Management working groups and those that submitted written comments in a much-shortened comment period. Given the shortened timeframe between the comment period and the Commissioner’s Decision, the Commissioner has attempted to acknowledge, summarize, and respond to as many comments as possible.¹⁹ The Commissioner has not been able to respond to all comments and, therefore, instructs Staff to provide opportunities in upcoming TRMAC and CAC processes, and through individual communications with stakeholders, to discuss and respond to such comments.

The following sections detail stakeholder comments and the Commissioner’s Decision:

III. TECHNICAL GUIDANCE TO DETERMINE IF A FUEL SWITCHING IMPROVEMENT MEETS THE REQUIRED CRITERIA AND TO CALCULATE ENERGY SAVINGS

The approved technical guidance to determine if an efficient fuel-switching improvement meets required criteria and to calculate associated energy savings can be found at the end of this Decision in Appendix A.

A. EFFICIENT FUEL-SWITCHING TECHNICAL GUIDANCE DECISION KEY FINDINGS

The Commissioner first addresses overarching issues regarding EFS raised in Staff’s Proposal and stakeholder comments requiring the Commissioner’s determination.

CONSIDERATION OF ALTERNATIVE METHODOLOGIES

Several stakeholders supported allowing utilities to propose alternative methodologies when developing EFS programs. In discussing the complexity of Staff’s proposed methodology for quantifying GHG reductions, Xcel wrote “the Company encourages the Department to allow utilities to propose alternative methodologies when developing EFS programs, which the Department can review for reasonableness. This would be consistent with the approach used in calculating energy savings, in which companies can either rely on the TRM or propose an alternative calculation.”²⁰ Along similar lines, Minnesota Power stated:

Minnesota Power recommends there be an option, especially in the early years when utilities are subject to caps on the amount of allowed efficient fuel switching, to simply use the hourly emissions from the approved capacity expansion plan (the baseline) rather than requiring a second scenario that assumes a different generation mix.²¹

OTP also supports greater flexibility, requesting that:

If the Commissioner decides to approve the Department’s multi-step approach over a more simplified approach, Otter Tail requests the Commissioner to allow the approved

¹⁸ Organizations are listed in the chronological order that written comments were posted on eDockets.

¹⁹ To review comments in full, interested parties should go to [eDockets](#) and search for docket number 21-837.

²⁰ Xcel Comments at 2.

²¹ Minnesota Power comments at 2.

baseline capacity expansion plan to be used as an option for utilities instead of requiring a new Capacity Expansion Plan (CEM) scenario. The Company believes using the baseline CEM through 2026, when limits on EFS are removed, would be a reasonable approach.²²

CEE also appears to support greater flexibility, suggesting that “the Department and stakeholders should continue working to simplify the methodology used to assess the full fuel cycle greenhouse gas emissions of electricity in ECO. The Department’s proposed methodology – with or without CEE’s recommendations regarding how to incorporate indirect emissions – is very complicated and may be impractical for many utilities.”²³

Commissioner’s Determinations:

The Commissioner appreciates stakeholder concern regarding the complexity of the EFS methodology, particularly for GHG emission accounting. The Commissioner also acknowledges that while Staff’s proposed methodology is both sound and rigorous, alternative methodologies, particularly when proposed during the period when EFS spending is limited (i.e. pre-2026), could provide great value to the collective learning and helpfully inform future iterations of this guidance. The Commissioner, therefore, will allow utilities to propose alternative EFS methodologies for Department review and consideration, under the following conditions:

1. Staff’s proposed methodology, as approved later in this document, is the assumed methodology to be used for determination of eligible EFS programs;
2. Utilities wishing to propose an alternative methodology must do so as part of the utility’s CIP triennial plan filing or a filed CIP plan modification, allowing for stakeholder review and comment in a manner consistent with applicable review timelines contained in Minnesota Rules 7690 *et seq.*;
3. Alternative methodologies must demonstrably satisfy all applicable EFS statutory requirements; and
4. Utilities wishing to develop alternative methodologies should engage with Department Staff prior to filing any proposed methodologies.

As with other technical aspects of the CIP program, the Commissioner expects EFS methodologies to become simplified and more standardized as they are continually discussed and refined through the TRM process.

Related to discussion of alternative methodologies, the Commissioner disagrees with comments describing the GHG reduction requirement for EFS measures in statute as a pass/fail exercise. While the Commissioner acknowledges that the statute only requires a reduction, accurately estimating GHG emission reductions associated with EFS programs, and all CIP programs, is necessary for both the Department’s annual CIP reporting obligations²⁴ and for assessing progress toward Minnesota’s statewide GHG emission reduction goals. The Commissioner will, therefore, continue to require pursuit

²² OPT Comments at 3.

²³ CEE Comments at 13.

²⁴ Minn. Stat. § 216B.241, subd. 1c(f).

of accurate GHG emission reduction estimates, even when a stage is reached where electric generation carbon intensity is at a level where GHG emission reductions associated with an EFS measure are indisputable.

EFFICIENT FUEL-SWITCHING SPENDING CAP CLARIFICATION

Minnesota Statutes § 216B.241, subd. 1c(g) states that “[n]otwithstanding any provision to the contrary, until July 1, 2026, spending by a public utility subject to this section on efficient fuel-switching improvements to meet energy savings goals under this section must not exceed 0.35 percent per year, averaged over three years, of the public utility’s gross annual retail energy sales.”

In the Proposal, Staff highlight that this appears to be a spending cap on EFS improvements, but instead of the cap being calculated as a percentage of utility gross operating revenues (GOR), as is historically typical for CIP spending requirements or caps, the statute refers to the utility’s gross annual retail energy sales. Staff also noted the belief that this was a typographical error. Xcel highlights this issue in its comments stating that:

. . . the Department’s reading of the statutory language is different from the one that the Company and other parties understood during negotiation of the ECO bill, which was that the language was placing a limit on utility spending on EFS. Indeed, the provision was regularly referred to in discussions as a “spending cap.”²⁵

Commissioner’s Determinations:

The Commissioner, Xcel, and Staff agree that this is an IOU spending cap on EFS. The Commissioner addresses two issues here: 1) how the spending cap is to be calculated, and 2) to whom the spending cap applies:

1. *Spending Cap Calculation* - Consistent with other CIP spending caps and requirements, spending on EFS improvements must not exceed 0.35 percent per year, averaged over three years, of the IOU’s gross operating revenue from non-exempt customers. EFS spending in IOU plans is to be prorated for January 1 - June 30, 2026.
2. *Utilities Subject to EFS Spending Cap* - This spending cap applies to electric IOUs implementing electric end use EFS improvements through Minn. Stat. § 216B.241, subd. 11 and natural gas IOUs implementing electric end use EFS improvements through Minn. Stat. § 216B.241, subd. 12.

MUNICIPAL AND COOPERATIVE UTILITIES (COUs)

As noted above, the Commissioner agrees with Staff that COUs will be uniquely challenged in using this guidance. MREA spoke specifically to these challenges:

We appreciate the recognition by Department staff that electric cooperatives face many important challenges to ECO implementation, including but not limited to, limited

²⁵ Xcel Comments at 4.

resources. One of our biggest concerns with the recent draft guidance is the substantial administrative burden it would place on rural electric cooperatives as they develop their efficient fuel switching plans and programs. We hope that adjustments can be made to reduce unnecessary burden to allow co-ops to dedicate resources to ECO implementation – helping co-op members reduce their overall energy burden.²⁶

GRE shared MREA’s concerns regarding administrative burden:

Efficient fuel switching evaluations analyzed at the measure level provides such a high hurdle that it prohibits the required electrification of end uses needed to meet Minnesota’s goals. Great River Energy appreciates the need for accuracy and verifiability in the methods, and Great River Energy believes there are equally accurate and measurable paths that do not require each measure to be evaluated on its own. These alternate methods avoid the additional resources required in the Department’s proposed methodology. The current methodology in the Department’s Proposed Decision has the potential to create significant additional work and verification that may make utilities, especially consumer owned utilities, reluctant to pursue EFS and load management programs to the level envisioned in the ECO Act. The EFS approach needs to be streamlined and barriers need to be removed, otherwise consumer owned utilities may be unable to achieve the energy policy goals both explicit and implicit in the ECO Act.²⁷

Commissioner’s Determinations:

The Commissioner thanks MREA and GRE for their comments. The Commissioner agrees that, especially in relation to COUs, ECO guidance must balance the need for accuracy and verifiability with utility usability. The Commissioner believes that this balance must be achieved to ensure that COUs are able to leverage the ECO Act in a manner intended by statute and that methodology complexity is not seen as a barrier to this. Staff, therefore, are instructed to prioritize support for COUs who intend to include EFS and load management programs in the next CIP planning cycle. This support should include:

- Working with COUs to propose and develop a simplified EFS methodology. This simplified methodology should provide COUs with a less burdensome pathway for establishing compliance with EFS statutory requirements.
- Working with COUs to discuss a practical level for which cost-effectiveness should be evaluated (e.g. measure, program, segment, or portfolio).
- Extending the submission date for COU 2021 results and 2023 (and beyond) plans from June 1, 2022 to August 1, 2022, to provide COUs and the Department with an extended planning period.

²⁶ MREA Comments at 2.

²⁷ GRE Comments at 2.

B. COMMENTS IN RESPONSE TO STAFF'S PROPOSED TECHNICAL GUIDANCE TO DETERMINE IF AN EFFICIENT FUEL-SWITCHING IMPROVEMENT MEETS REQUIRED CRITERIA AND TO CALCULATE ASSOCIATED ENERGY SAVINGS

The approved technical guidance to determine if an efficient fuel-switching improvement meets required criteria and to calculate associated energy savings can be found at the end of this Decision in Appendix A.

STEP 1 – CONFIRM STARTING FUEL TO ENDING FUEL TYPE AND UTILITY ELIGIBILITY

Starting Fuel Definition

In the Proposal, Staff proposed that eligible fuels serving as the starting fuel for efficient fuel-switching improvements be guided by Minn. Stat. § 216B.2402, subd. 8, which includes “electricity, propane, natural gas, heating oil, gasoline, diesel fuel, or steam, consumed by a retail utility customer.” Allowing for some possible flexibility, Staff proposed utilities be allowed to propose additional fuel types on a custom basis.

Comments

MERC disagreed with this interpretation, preferring, instead, “to include any form of energy that is consumed by a retail utility customer.”²⁸ Further, MERC argued that restricting the starting fuel to only those listed is not fuel-neutral and therefore not supported by the statute.”²⁹

Commissioner’s Determinations:

The Commissioner agrees with Staff that the fuels listed in statute are the appropriate starting fuels for efficient fuel-switching improvements. The Commissioner also recognizes that Staff provide an opportunity for utilities to propose additional fuel types for Department consideration on a custom basis. This approach should adequately cover the range of possible starting fuels.

Eligible Ending Fuels and Implementing Utilities

In the Proposal, Staff recognized electricity and natural gas as eligible ending fuels for efficient fuel-switching improvements. Staff proposed permitting electric and gas utilities (IOUs and COUs) to offer EFS measures and programs with an electric ending fuel type because these scenarios are explicitly permitted in statute.^{30 31 32} Staff proposed that utilities interested in implementing natural gas EFS measures and programs do so on a custom basis for Department consideration as the statute is less clear on the eligibility of this approach. Staff also proposed allowing for EFS improvements to include both electric and natural gas components,³³ such as back-up natural gas heating to supplement an air source heat pump, “with the expectation that electricity is the primary ending fuel.”³⁴

²⁸ MERC Comments at 2.

²⁹ MERC Comments at 2.

³⁰ Minn. Stat. § 216B.241, subd. 11.

³¹ Minn. Stat. § 216B.241, subd. 12.

³² Minn. Stat. § 216B.2403, subd. 8.

³³ Staff’s Proposed Decision at 8.

³⁴ MERC Comments at 2.

Comments

Several commenters took issue with whether a natural gas IOU should be permitted to implement natural gas EFS improvements. CEE stated, “[t]he statute does not include language permitting public utilities that provide natural gas service to propose programs to install natural gas technologies to reduce the consumption of electricity or any other fuel.”³⁵ Fresh Energy echoed CEE concerns, “[f]or natural gas IOUs, it is difficult to envision how a natural gas EFS project could comply with the statutory requirements in Minnesota Statutes 216B section 241, subdivision 12.”³⁶ NRDC stated that “switching from electricity to gas should be explicitly prohibited - even inefficient electric resistance heating or water heating - because it would be preferable from a climate perspective to upgrade to more efficient electric service (e.g. cold climate heat pumps).”³⁷

CenterPoint and MERC also expressed concern about the Proposal’s statement that EFS improvements that use both electricity and natural gas should be allowed “with the expectation that electricity is the primary ending fuel.” MERC points to the ECO statute “which states that EFS improvements should ‘be measured on a fuel-neutral basis’” and indicates that the statute does not distinguish between primary and secondary fuels.³⁸ CenterPoint agreed with MERC, stating that “‘Primary’ has not been defined in the guidance document or assigned to another process such as the TRMAC for definition.”³⁹

Commissioner’s Determinations:

The Commissioner agrees with Staff’s proposal that electric and gas utilities (IOUs and COUs) offering EFS measures and programs with an electric ending fuel type are explicitly permitted in statute.^{40 41 42}

The Commissioner also agrees that the statute does not explicitly permit natural gas IOUs to implement EFS improvements with natural gas ending fuels. The Commissioner agrees with Staff’s approach, however, requiring interested utilities (including natural gas IOUs) to propose EFS improvements with natural gas ending fuels on a custom basis and that such proposals must demonstrate that the measure or project is statutorily permissible and meets the necessary requirements of these guidelines. Utilities wishing to propose EFS measures with natural gas ending fuels must do so as part of the utility’s CIP triennial plan filing or filed CIP plan modification, allowing for stakeholder review and comment.

Regarding Staff’s statement that “EFS improvements may use electricity and natural gas with the expectation that electricity is the primary ending fuel,” the Commissioner agrees with MERC and CenterPoint that the “primary ending fuel” should be removed from the guidance to read “EFS improvements may use a combination of electricity and natural gas.”

³⁵ CEE Comments at 3.

³⁶ Fresh Energy Comments at 3.

³⁷ NRDC Comments at 1.

³⁸ MERC Comments at 3.

³⁹ CenterPoint Comments at 5.

⁴⁰ Minn. Stat. § 216B.241, subd. 11.

⁴¹ Minn. Stat. § 216B.241, subd. 12.

⁴² Minn. Stat. § 216B.2403, subd. 8.

STEP 2 - DETERMINE EFFICIENT FUEL-SWITCHING IMPROVEMENT, BASELINE TECHNOLOGY, AND BASELINE COMPARISON

Baselines

In the Proposal, Staff indicated the importance of establishing the baseline technologies to which an efficient fuel-switching improvement should be compared to enable determinations of changes in energy use and greenhouse gas emissions and to assess the cost-effectiveness of such improvements. Applying a similar approach to that used for evaluating energy conservation measures, Staff recommended that baseline determinations be handled through the TRM process or on a custom basis. The Proposal also set requirements for baseline information that utilities should collect from customers, specified how efficient fuel-switching improvements in new construction should be handled, and indicated that EFS improvements “should produce a similar level of quality or level of service as the identified baseline technology.”

Comments

Although no commenters expressed concerns about establishing baselines through the TRM or custom process, Xcel took issue with Staff’s requirement that EFS improvements “should produce a similar level of quality or level of service as the identified baseline technology” and recommended removing this language. In relation to these concerns, Xcel wrote “the creation of this requirement does not appear to be necessary. Establishment of a reasonable baseline is a standard part of assessing measures under CIP. It is not clear how the ‘similar level of service’ requirement is different and additional to the Department’s proposal that EFS baselines and assumptions be established in the TRM process or (in the interim) proposed and reviewed on a custom basis.”⁴³

CenterPoint, however, supports the similar level of quality or level of service requirement but recommended revising the language to read:

This can be demonstrated by explaining how the EFS technology provides a comparable (or higher) level of service and/or output and technical assumptions used to demonstration [sic] ‘similar level of quality’ should be the basis for the criteria for an EFS improvement as a part of TRM development or as filed by a utility on a custom basis.⁴⁴

Xcel raised concern about Staff’s recommended reporting requirements related to baselines, stating, “[t]he Company agrees that there is value in collecting baseline information when feasible as part of the normal course of delivering programs to customers. However, the Company does not believe that reporting the baseline as part of the annual status report is likely to be meaningful.”⁴⁵ CenterPoint supports this position and indicates that “collecting and providing data on the baseline technology will not necessarily indicate any issues or concerns, or identified effective practices.”⁴⁶

Two commenters (CEE and CenterPoint) were confused by Staff’s discussion of EFS improvements in new construction and one disagreed (Ceres) with the requirements. Ceres recommended removing the language while CEE recommended “that the Department consider all energy efficient actions taken in new construction to be energy conservation, with the exception of efficient electric measures

⁴³ Xcel Comments at 7.

⁴⁴ CenterPoint Comments at 6.

⁴⁵ Xcel Comments at 6.

⁴⁶ CenterPoint at 6.

implemented by natural gas utilities. Efficient electric technologies incentivized or otherwise funded by natural gas utilities for new construction should be considered and subject to the requirements of efficient fuel switching.”⁴⁷

Commissioner’s Determinations:

Regarding the requirement that an EFS technology provide a comparable (or higher) level of service as the baseline technology, the Commissioner agrees with commenters that this language should be revised to refer to the TRM’s method of determining comparable technologies through reasonable replacement. The Commissioner adds, however, that EFS related modifications to the TRM should more clearly define what constitutes a reasonable replacement.

In response to Staff’s proposed requirement for utilities to collect and report baseline information, the Commissioner also agrees that this is better handled through future research studies.

Regarding the discussion of EFS improvements as they apply to new construction, the Commissioner agrees that the requirements should be removed but recommends that consideration of EFS improvements in new construction (in particular, building electrification) be handled through the TRM and/or custom proposals.

STEP 3 – ENERGY CHANGE ANALYSIS, SOURCE ENERGY CONSUMPTION, AND GHG (CO₂) EMISSIONS

Staff’s proposed Step 3 generated the most comments, likely because it is the step that is both crucial for qualifying EFS improvements and also the most complex. As indicated above in Section III. A. of this Decision, the Commissioner will allow utilities to propose alternative EFS methodologies for Department review and consideration, guided by the listed conditions.

In the following paragraphs, the Commissioner references comments regarding key areas of concern related to Step 3 and then provides the Commissioner’s determinations.

Step 3.1 - Site and Source Energy Change Analysis

Step 3.1 of Staff’s Proposal provides guidance for determining whether an EFS improvement results in a net increase in electricity or natural gas use and whether there is an overall net decrease in energy consumption when incorporating sources that produced the energy consumed on site.

Comments

Comments on this step requested clarifications and some modifications to Staff’s Proposal. CEE and NRDC requested that Staff clarify its use of the term “marginal” in describing the source energy values that utilities should use to calculate changes in source energy use associated with EFS improvements.

CEE believes this section requires clarification for electrification measures. In Step 3.2 of the Proposed Decision, ‘marginal’ refers to the relative change in emissions, on an hourly basis, between a baseline capacity expansion model scenario and a high-electrification capacity expansion model scenario. However, the relative change in the average heat rate

⁴⁷ CEE at 5.

of each hour between the two capacity expansion model scenarios would not render a meaningful figure.⁴⁸

CEE recommends “that utilities determine the source energy of electrification measures using the heat rates associated with the high-electrification scenario capacity expansion model.”⁴⁹ In its comments about Staff’s proposal, NRDC said:

Conceptually, this appears to align with our recommendation for using long-run marginal rather than short-run marginal energy source values. However, it would be much better to say that explicitly here and in Step 3.2, including an explanation of the difference, so that users of the guide are able to distinguish between the two.⁵⁰

Some commenters also questioned whether the load shapes for baseline measures against which EFS improvements are compared for purposes of assessing source energy changes and GHG impacts should be assumed to mirror those of the EFS Improvements. Ceres wrote, “we have concerns with the Proposal’s assumption that baseline technologies and their associated EFS improvements will have the same load shape. Indeed, baseline load shape research, including monitoring initiatives conducted in Massachusetts, suggest strongly otherwise. As such, we recommend removal of this language.”⁵¹

As discussed further in Step 3.2, Xcel Energy raised concerns about the ability to produce the type of hourly marginal analysis Staff proposes, for use with source energy and GHG calculations. “The Company has attempted CEM modeling, similar to what the Department describes in the Proposed Decision. Our experience thus far does not give us confidence that EnCompass is currently capable of accommodating the type of hourly marginal analysis described in the Department’s approach.”⁵²

Commissioner’s Determinations:

The Commissioner agrees with CEE and NRDC that Staff’s Proposal should clarify how source energy values should be calculated for electrification EFS improvements, and that such estimates should be based on the utility’s capacity expansion plan that includes the appropriate electrification scenario. These values should be based on long-run marginal values which, in this case, refers to the marginal generator serving the load for each hour of the expansion plan.

The Commissioner also agrees that the Proposal should not assume that baseline measures will have the same load shapes as EFS improvements.

Finally, regarding Xcel’s concern about the ability to produce hourly estimates to conform to Staff’s Proposal, it seems that these clarifications will resolve the issue because the CEMS modeling can produce hourly source energy values.

Step 3.2 - Calculate Greenhouse Gas (GHG) Emissions Savings

Step 3.2 of Staff’s Proposal provides guidance for determining whether an EFS improvement will result in a net reduction in statewide GHG emissions, as defined in Minnesota Statutes § 216H.01, subd. 2,

⁴⁸ CEE Comments at 6.

⁴⁹ *Id.*

⁵⁰ NRDC Comments at 2.

⁵¹ CERES Comments at 2.

⁵² Xcel Comments at 10.

based on the utility's hourly emissions profile. Staff's proposal allows COUs that do not possess hourly profiles to obtain this information from the Department.

Comments

Comments on Staff's proposal for this step focus on the proposed methodologies for estimating direct (combustion emissions) and indirect (upstream emissions) source energy greenhouse gases and the complexity of Staff's proposed approach.

Regarding estimates of direct GHGs from EFS improvements, CEE supports Staff's proposed approach but cautioned "that sophisticated modeling methodologies require significantly more technical oversight and validation than what was discussed in the ECO stakeholder process."⁵³ Xcel observed that its CEMS model may not be able to reliably produce hourly values associated with the Proposal's approach to estimating direct GHGs. They recommend that "the Proposed Decision for calculating site-to-source and emissions factors remain high-level at this time."⁵⁴ Further, Xcel does not believe that Staff's methodology captures the changes to its system generation mix attributable to aggregate EFS loads. Related to this point, they recommend developing a "proxy plant" which "represents the system load (MWh and peak MW) shifted to a different generation mix after EFS is introduced to the system. The source energy, avoided revenue requirements (ARR), and GHG emissions of the Proxy Plant should be blended with the EFS specific source, ARR, and GHG impacts to capture the whole impact of EFS."⁵⁵

Minnesota Power and OTP state a preference for using the resource mix associated with their most recently approved expansion plans to estimate greenhouse gas emissions impacts of EFS improvements.

Minnesota Power . . . recommends an option be included for utilities to use the approved expansion (plan) when it can reasonably be assumed that the anticipated electrification would not be likely to require a change in the resource mix or when there is uncertainty around when the added load will occur such that a new expansion is unlikely to be more accurate than the approved plan.⁵⁶

OTP raised concerns about the complexity of Staff's approach and requested "a more streamlined and practical approach for determining a reduction in GHG emissions",⁵⁷ stating further that:

Otter Tail's preferred approach would be that if an electric utility is decarbonizing and continually meeting Minnesota's Renewable Energy Standard or the utility is making progress towards goals of its generation resources being over 95 percent carbon free by 2050 then any added EFS measures should be considered a move towards reducing GHG emissions.⁵⁸

⁵³ CEE Comments at 8.

⁵⁴ Xcel Comments at 11.

⁵⁵ Xcel Comments at 12.

⁵⁶ Minnesota Power Comments at 2.

⁵⁷ OTP Comments at 2.

⁵⁸ OTP Comments at 2.

If the Department does not agree with its simplified approach, OTP requested that the Commissioner allow utilities to (through 2026) use “the approved baseline capacity expansion plan . . . as an option for utilities instead of requiring a new Capacity Expansion Plan (CEM) scenario.”⁵⁹

Regarding estimates of indirect GHG emissions from EFS improvements (which, together with direct GHG emissions constitute a full fuel-cycle analysis), both Xcel and CEE prefer a higher-level approach than embodied in the Proposal and question the use of a Lifecycle Emissions Multiplier (LEM). Xcel believes a LEM is a flawed approach for two reasons:

First, developing the LEM using combustion-only emissions would not properly account for nuclear generation which has upstream emissions associated with fuel mining, processing, and transport, but zero downstream combustion emissions.

Second, calculating an LEM by dividing lifecycle emissions from GREET by combustion emissions from eGRID or EIA data is unnecessarily complex and introduces a potential source of error in using different data sets.⁶⁰

CEE stated that it:

Do[es] not believe it is useful to develop a lifecycle ratio for fuels that are not used for electric generation. Estimating the full fuel cycle greenhouse gas emissions of fuels that are used directly in end-use technologies can be done by simply multiplying the fuel consumption of those technologies by the full fuel cycle emissions factor of the fuel. The full fuel cycle emissions factor can be determined through the GREET model, as proposed by Staff.”⁶¹

CEE also expressed concern about “the correlation between the ‘marginal’ emissions levels, as determined in Step B of the proposal, and the specific fuels operating in each hour.”⁶² Both CEE and Xcel recommend further study of the topic as an alternative to adopting Staff’s proposed approach. Xcel wrote that:

As with the approach proposed for cost-effectiveness calculations, we recommend an advisory committee be developed for this specific topic. In the interim, the Department can review utility proposals for reasonableness with respect to their treatment of GHG. If necessary, the Department could allow utilities to use its methodology if utilities do not feel they have the resources to develop a reasonable alternative.”⁶³

CEE provided an alternative methodology that they believe is more straightforward than Staff’s and “is less susceptible than the Department’s proposal to unintended errors that may skew emissions results and then EFS emission testing.”⁶⁴

⁵⁹ OTP Comments at 3.

⁶⁰ Xcel Comments at 13.

⁶¹ CEE Comments at 10.

⁶² Id.

⁶³ Xcel Comments at 13.

⁶⁴ CEE Comments at 12.

Several organizations expressed concerns about the complexity of Staff’s proposed approach to estimating direct greenhouse gas impacts associated with efficient fuel-switching improvements. GRE and MREA state that the proposed approach will pose challenges for their cooperative utility members. “In lieu of the more complex method proposed by the Department, Great River Energy and its member owners request an alternative approach which realizes that certain measures provide sufficient societal benefit and do not require the additional, detailed analysis proposed by the Department.”⁶⁵ MREA expressed a similar view.

Another important area where administrative burden on electric cooperatives can be reduced is with regard to the greenhouse gas emissions methodology proposed in the draft guidance. We are concerned that the proposed methodology is much too complicated and complex. Requiring multiple, detailed modeling runs, with intricate hour by hour comparative analyses seems designed to calculate how much better an electrification measure would be than an existing fossil-fuel application. However, the test in the ECO statute is simply whether or not an electrification measure reduces greenhouse gas emissions – a much simpler pass/fail exercise than is contemplated by the proposed methodology.⁶⁶

Although Fresh Energy supports Staff’s proposed “use of marginal emission rates for electrification proposals, as the term is used in this context to describe “the incremental emissions impact that EFS measures have on the electricity generation mix and its dispatch”, the organization states that “. . . it will be important to work toward the simplification of the assumptions that underpin the GHG emissions calculations going forward.”⁶⁷ CEE, too, “believes that the Department and stakeholders should continue working to simplify the methodology used to assess the full fuel cycle greenhouse gas emissions of electricity in ECO.” As they write, “[t]he Department’s proposed methodology – with or without CEE’s recommendations regarding how to incorporate indirect emissions – is very complicated and may be impractical for many utilities.”⁶⁸

CEE expressed a perspective similar to MREA in supporting a pass/fail approach to authorizing EFS improvements.

“CEE believes it is possible to conduct an analysis that predicts, with reasonable accuracy and precision, whether electrification measures pass both the emissions test and the source energy test in ECO based on a utility generation mix. In other words, it is possible to use a measure-specific load curve, paired with known hourly and seasonal production curves for different electric generation resources, to determine what generation mix thresholds must be met for specific electrification measures to qualify for inclusion as an EFS measure through ECO.”⁶⁹

⁶⁵ GRE Comments at 3.

⁶⁶ MREA Comments at 2.

⁶⁷ Fresh Energy Comments at 4.

⁶⁸ CEE Comments at 13.

⁶⁹ CEE Comments at 14.

Commissioner’s Determinations:

The Commissioner appreciates the detailed and thoughtful comments from stakeholders on calculating greenhouse gas emissions associated with efficient fuel-switching improvements. Continuing active stakeholder engagement will be critical to refining the guidance that utilities will use to assess and develop efficient fuel-switching measures and programs. It is understood that parties prefer simplicity over complexity in terms of the methodologies that will be used to assess and qualify EFS improvements that can be included in utility programs. However, it is also important to balance the desire for simplicity with the need to reliably, accurately, and at the level of detail required by the ECO Act, estimate greenhouse gas impacts from EFS measures. Recognizing that Staff’s proposed approaches to estimating both direct and indirect emissions may be complex, the Proposal also includes alternative pathways depending on utility capabilities and available information.

The Commissioner generally supports Staff’s proposed approaches, with some limited changes, and considers this to be the default approved approach. Utilities, though, are permitted to propose alternative methodologies for Department review, either as program modifications or as part of their triennial filings. Utilities are encouraged to consult Department staff prior to filing formal proposals.

STEP 4 - IMPROVE UTILITY SYSTEM LOAD FACTOR

Step 4 of Staff’s Proposal requires that utilities determine whether an EFS Improvement is operated in a manner that serves to improve the utility’s system load factor.

Comments

The Department received a limited set of comments on Step 4. Martin Kushler recommended an alternative approach to Staff’s observation that the ECO Act’s phrase “relative to the fuel being displaced” is problematic because, for most efficient fuel-switching improvements, the fuel being displaced will be natural gas and comparing natural gas to electric technology load factors is not useful.⁷⁰ He recommended that this phrase “be operationalized as ‘relative to the load shape under the ‘pre-EFS condition.’”⁷¹ Using this approach, Kushler suggests that the “first component (much improve system load factor) does not have to be ignored (and should not be), if the above operationalization is used.”⁷²

Commissioner’s Determinations:

The Commissioner generally supports Staff’s proposed approach for assessing whether an EFS measure improves utility system load factor but agrees with proposed modifications from Martin Kushler regarding operationalizing the phrase “relative to the fuel being displaced.”

⁷⁰ “A fuel-switching improvement is deemed efficient if, applying the technical criteria established ... the improvement, relative to the fuel being displaced: (4) is installed and operated in a manner that improves the ... utility’s system load factor.” Minn. Stat. §§ 216B.2403, subd. 8(a) and 216B.241, subd. 11(d).

⁷¹ Martin Kushler Comments at 18.

⁷² Id.

STEP 5 – INTEGRATION OF RENEWABLE ENERGY INTO THE ELECTRIC SYSTEM

Step 5 of Staff’s Proposal concerns, for IOU EFS improvements that deploy electric technologies, whether the measure can be operated to facilitate the integration of variable renewable energy.

Comments

The Department received one comment related to the ECO Act’s requirement that the Department consider, when evaluating IOU-proposed electric EFS technologies, whether the measure can be operated to facilitate integration of renewable energy. GRE points out that some of the EFS criteria may function at cross-purposes. “For example, electric thermal storage systems pass all the tests except for reducing source energy. Operating these programs at off-peak times to ensure that the load factor, renewable integration, and cost effectiveness criteria are met might come at the cost of reducing source energy.”⁷³ Although GRE does not propose changes to Step 5, it noted that “efficient fuel switching programs must be manageable for utilities, contractors, consumers, and the Department to understand and implement.”⁷⁴

Commissioner’s Determinations:

The Commissioner supports Staff’s proposed approach for considering whether IOU electrification EFS improvements can be operated to facilitate integration of variable renewable energy.

STEP 6 – COST EFFECTIVENESS CALCULATIONS

Several comments were received pertaining to the EFS cost-effectiveness approach in the Proposal. Regarding Staff’s proposal to allow utilities to propose, on a custom basis, ways of assessing EFS cost-effectiveness until the Department has adopted a specific approach, Xcel responded that “[t]he Company supports this approach and looks forward to working with the Department through the TRM process and CAC to refine the cost-benefit analysis framework.”⁷⁵

Ceres and NRDC raised concerns about assessing EFS cost-effectiveness at the measure level. Ceres stated “[w]here practical, screening efficiency/EFS investments at a higher level than at the measure level will support the development and implementation of programs that are more comprehensive for addressing customer needs.”⁷⁶ NRDC shared similar concerns:

While we support the notion of making the societal test the primary test, we believe there needs to be flexibility in applying it to a package of measures, rather than only by a measure-by-measure basis. Our reasoning is that we would not want to preclude full electrification of the home and if multiple electrification measures are being considered and one is found to be not cost-effective, we would not want to discourage that measure from taking place, especially if it would be the last end use need to fully electrify the home.⁷⁷

⁷³ GRE Comments at 4.

⁷⁴ GRE Comments at 3.

⁷⁵ Xcel Comments at 7.

⁷⁶ Ceres Comments at 3.

⁷⁷ NRDC Comments at 4.

Ceres also “support[s] efforts to better incorporate public health, climate, and other inputs and the use of an appropriate discount rate into cost effectiveness protocols.”⁷⁸ These efforts are detailed further in Ceres comments.⁷⁹

MERC also provides comments on EFS cost-effectiveness. Specifically:

MERC believes that all utilities should include cost-effectiveness evaluations for individual EFS measures based on the Societal Test, the Utility Test, the Participant Test, and the Ratepayer Impact Test. Although the ratepayer perspective is specifically mentioned as part of the technical criteria for natural gas utilities in 216B.241 subd. 12(b), it appears to be absent from the criteria for electric utilities. It is not clear from the statute why a different set of criteria should be applied to EFS improvements based on the utility, especially for cost-effectiveness.⁸⁰

Commissioner’s Determinations:

The Commissioner largely agrees with Staff’s proposed approach regarding EFS cost-effectiveness. However, regarding EFS cost-effectiveness review, the Commissioner agrees with NRDC and Ceres that program design and comprehensiveness benefits may be impeded when reviewing and approving EFS cost-effectiveness at the measure level. The Commissioner, therefore, requires that EFS cost-effectiveness be reviewed and approved at the program level, that for inclusion in CIP the program must be found to be cost-effective from the societal perspective, and that utilities report EFS cost-effectiveness results at the measure level in annual status reports. The Commissioner hopes that this will provide utilities with greater program design flexibility while also providing the Department and stakeholders more granular, measure level cost-effectiveness information.

Regarding MERC’s request that both electric and natural gas IOUs be subject to same EFS cost-effectiveness evaluation tests, the Commissioner agrees that it is unclear in statute why natural gas IOUs are required to determine ratepayer cost-effectiveness⁸¹ while electric IOUs and COUs are not⁸². However, while the reasoning for this distinction is unclear, the perspectives to be considered by each utility type are clearly enumerated. The Commissioner, therefore, will not require electric utilities to use the ratepayer test for EFS purposes.

ADDITIONAL CONSIDERATIONS

Reporting Efficient Fuel-Switching Improvement Savings

Staff provided guidance on how utilities should report efficient fuel-switching improvements.

⁷⁸ Ceres Comments at 3.

⁷⁹ Id.

⁸⁰ MERC Comments at 3.

⁸¹ Minn. Stat. § 216B.241, subd. 12(a)(2).

⁸² See Minn. Stat. §§ 216B.241, subd. 11(d)(3) and 216B.2403, subd. 8(a)(3).

Comments

Several parties commented on Staff's Proposal related to how utilities will claim and report savings from efficient fuel-switching improvements. CenterPoint and MERC focus their comments on how savings for individual utilities will be claimed and reported, particularly given that electric EFS improvements for natural gas IOUs are considered energy conservation. The distinction between the designation as energy conservation as opposed to EFS is relevant because Minn. Stat. § 216B.241, subd. 12(a) allows natural gas IOUs to implement EFS improvements that switch from gas to electric and count associated energy savings toward the energy savings goal under section § 216B.241, subdivision 1c. MERC provides an example of a switch from a natural gas furnace to an air source heat pump (ASHP) to show, for reporting purposes, "that a portion of the net reduction in energy consumption may be claimable under CIP or EFS."⁸³ MERC then "requests that Staff consider this example and provide further clarification."⁸⁴

CenterPoint raises a different concern related to "ambiguity in the dividing line between the types of energy savings utilities can claim" and states that "there is the potential for duplicative energy savings claims because both utilities can provide CIP funds for the same EFS improvement."⁸⁵ CenterPoint recommends the following for how gas and electric utilities can claim savings:

Utilities can claim energy savings for an energy conservation improvement that uses their fuel, installed with an EFS improvement (e.g., gas back-up with an ASHP). These energy savings would be associated with a highly-efficient measure (e.g., a gas utility offering a rebate for a 96% efficient furnace).

Utilities can claim EFS energy savings associated with reducing the use of their fuel by installing equipment that uses a fuel other than their own. Energy savings would be associated with an EFS improvement and can only be claimed up to code for the equipment (e.g., a gas utility offering a rebate for an ASHP of SEER 14 and HSPF 8.2). Utilities offering CIP for energy conservation improvements (e.g., an electric utility offering a rebate for an ASHP of SEER 15 and HSPF 9) associated with the EFS improvement from the other utility would claim energy savings based on the high-efficient pieces of equipment.⁸⁶

Martin Kushler observes that Staff's requirement that utilities report "site-based" savings for EFS measures may be incorrect. As he states, it "[s]eems like that should be 'source energy savings'. That is clearly what is called for in the legislation. If you additionally would like reporting on site-based savings, at least make clear the requirement for source energy analysis and reporting."⁸⁷

Kushler comments further on the information that Staff recommends utilities include in their Annual Reports. In addition to the requested information, Kushler states that "it would be very helpful to have information about the types of EFS improvements accomplished, information on associated costs,

⁸³ MERC Comments at 5.

⁸⁴ *Id.*

⁸⁵ CenterPoint Comments at 3.

⁸⁶ *Id.*

⁸⁷ Martin Kushler Comments at 22.

etc.”⁸⁸ He also says, “[i]t would be really useful to also report energy savings in source energy units (natural gas, propane, etc.) to help observers visualize the impacts.”⁸⁹

Commissioner’s Determinations:

The Commissioner generally agrees with Staff’s Proposal with the following modifications, some of which are intended to clarify the guidance. In particular, the Commissioner appreciates MERC and CenterPoint’s requests to clarify EFS improvements as they apply to natural gas IOUs. Regarding MERC’s comments regarding how natural gas and electric utilities would claim savings from EFS projects, it is anticipated that evaluations of EFS measures (for cost effectiveness and savings claims) will generally use the same baselines as would be the case if the measure were energy conservation or energy efficiency. The relevant test, as discussed in Step 2, is whether the new measure is a comparable technology to the baseline technology. Savings claims for the same EFS measure should not be different whether an electric or a gas utility is implementing it.

CenterPoint requests clarification related to whether savings from individual EFS measures should be parsed into “conservation” and “EFS” elements. The Commissioner believes this request complicates reporting and that EFS improvements should be designated as EFS improvements; however, natural gas IOUs are permitted to report savings from electric EFS improvements as part of conservation savings. This is relevant to natural gas utilities because, per Minn. Stat. § 216B.241, subd. 1c, goals are set based on energy conservation improvements and, therefore, natural gas IOUs are permitted to claim savings from EFS improvements toward these goals while electric IOUs are not. For natural gas IOUs, energy savings from an EFS improvement will be “double counted” as it is categorized as both EFS savings and energy conservation savings. Natural gas IOU reports should clearly call this out and the revised guidance includes this requirement.

CenterPoint also raises a concern about double counting savings between electric and gas utilities which may be able to incentivize the same measures and how programs targeting the same measure will be handled. The Commissioner understands this concern and directs overlapping electric and gas utilities to coordinate programmatic efforts in order to reduce customer confusion, limit “incentive competition” and eliminate double counting of savings.

In response to Martin Kushler’s comments, the Commissioner affirms Staff’s request that utilities report site-based savings. Reporting on source-based savings would complicate other aspects of EFS programs such as how EFS measures are evaluated for cost effectiveness. Cost effectiveness evaluations will use site-based savings (with adjustments for line losses). Importantly, the ECO Act qualifies EFS improvements for inclusion in utility programs based on source-based savings as discussed in Step 3.1 and uses source-based greenhouse gas emissions in Step 3.2. However, consistent with energy conservation and energy efficiency savings, EFS improvements should be reported on site-based savings. The Guidance, however, should be updated to include a request for reporting on source-based as well as site-based savings so that this information is publicly available.

⁸⁸ Martin Kushler Comments at 23.

⁸⁹ Id.

Martin Kushler also requested that utilities include additional information in their reports related to EFS improvements. The Commissioner will encourage but not require utilities to include these elements as the information can be helpful in giving a more complete picture of the impacts from EFS improvements.

Combined Heat and Power (CHP)

CenterPoint and NRDC submitted comments in response to Staff's proposal that CHP projects be considered an energy conservation measure, not an efficient fuel switching measure. CenterPoint agrees with this clarification.⁹⁰ NRDC wrote:

Combined Heat and Power (CHP) is arguably efficient fuel-switching given that it is an increase in gas consumption at the site that then results in less electricity consumption from the grid. This paragraph parses out CHP into two parts: 1) generation of electricity on site, 2) the use of waste heat from such on-site generation to displace gas that would otherwise be used for heating. However, it would never be cost-effective to do the former without the latter. The cost-benefits of CHP are in having these two parts of the system function as a package, and as a package that intentionally uses extra gas on-site to reduce electricity consumption from the grid.⁹¹

Commissioner's Determinations:

The Commissioner agrees with Staff's classification of CHP as an energy conservation measure and not a EFS measure. As noted by Staff, Minn. Stat. § 216B.2402, subd. 6 defines "waste heat that is recovered and converted into electricity or used as thermal energy" as "energy conservation." Further, Minn. Stat. § 216B.2402, subd. 22 defines "waste heat recovered and used as thermal energy" as "capturing heat energy that would be exhausted or dissipated to the environment from machinery, buildings, or industrial processes, and productively using the recovered thermal energy where it was captured or distributing it as thermal energy to other locations where it is used to reduce demand-side consumption of natural gas, electric energy, or both." Therefore, the Commissioner agrees with Staff that CHP projects are permitted within CIP as an energy conservation measure in a manner consistent with Minn. Stat. §§ 216B.241, subd. 1c(d) and 216B.2403, subd. 2(a)(4).

IV. TECHNICAL GUIDANCE TO DETERMINE IF A LOAD MANAGEMENT MEASURE MEETS NECESSARY COST-EFFECTIVENESS REQUIREMENTS

Regarding the inclusion of load management programs in CIP, Staff proposed the following:⁹²

The ECO Act places a new emphasis and urgency on load management programs in CIP. Specifically, Minn. Stat. Section § 216B.2401(a) now reads:

[T]he legislature finds that optimizing the timing and method used by energy consumers to manage energy use provides significant benefits to the consumers and to the utility system as a whole. The legislature further finds that cost-effective energy savings and load management programs should be procured systematically and aggressively in order to reduce utility costs for businesses and residents, improve the competitiveness and

⁹⁰ CenterPoint Comments at 9.

⁹¹ NRDC Comments at 7.

⁹² Staff's Proposed Decision at 24-25.

profitability of businesses, create more energy-related jobs, reduce the economic burden of fuel imports, and reduce pollution and emissions that cause climate change.⁹³

(emphasis added.) Minn. Stat. § 216B.2402, subd. 15 defines “load management” as “an activity, service, or technology that changes the timing or the efficiency of a customer’s use of energy that allows a utility or a customer to: (1) respond to local and regional energy system conditions; or (2) reduce peak demand for electricity or natural gas. Load management that reduces a customer’s net annual energy consumption is also energy conservation.”

Unlike EFS, the ECO Act does not require the Department to issue technical guidance related to load management activities. However, Staff believe it is important to provide stakeholders with information pertaining to the expanded role of load management activities in CIP and detail anticipated next steps in the development of a regulatory framework from which the Department will review proposed load management programs.

Utility Load Management Programs

For IOUs, Minn. Stat. § 216B.241, subd. 13(a) provides that “[a] public utility may include in the utility’s plan required under subdivision 2 programs to implement load management activities, or combinations of energy conservation improvements, fuel-switching improvements, and load management activities. For each program the public utility must provide a proposed budget, cost-effectiveness analysis, and estimated net energy and demand savings.”

Although the ECO Act does not provide the same level of detail related to consumer-owned utility load management programs, Staff propose, given the heavy emphasis placed on load management programs in § 216B.2401(a), that language relating to public utility load management programs (other than sections discussing shareholder incentive plans) also be applied to consumer-owned utility load management programs.

Load Management Program Cost-Effectiveness

Ultimately, load management program cost-effectiveness determines eligibility for inclusion in CIP. Minn. Stat § 216B.241, subd. 13(a) states that “[t]he commissioner may approve a proposed program if the commissioner determines the program is cost-effective, considering the costs and benefits to ratepayers, the utility, participants, and society.” Cost-effectiveness methodologies for CIP have historically been developed with assistance from the Cost-effectiveness Advisory Committee (CAC), a group consisting of Department, utility, and stakeholder representatives. Staff propose that a detailed methodology for load management program cost-effectiveness be developed as part of the CAC’s work. This approach will help ensure that cost-effectiveness approaches for energy conservation, EFS, and load management programs share consistencies where possible.

As the next CAC review process will not likely be completed until the beginning of 2023 (in preparation for IOU 2024-2026 triennial plan development), Staff propose allowing

⁹³ Minnesota Statutes § 216B.2401 (a).

utilities to use an interim custom process for evaluating load management program cost effectiveness. In this context, custom process means that COUs and IOUs can propose to the Department for review and approval their proposed load management programs and associated methods of estimating cost-effectiveness. When proposing custom cost-effectiveness methodologies for load management programs, Staff recommend that the utilities follow the demand response cost-effectiveness guidance described in Chapter 7 of the National Standard Practice Manual (NSPM).⁹⁴ Staff expect that the custom approaches utilities use as part of this custom process will help inform CAC discussions on the topic.

Staff propose issuing the following guidance for utilities wishing to submit load management programs with custom cost-effectiveness approaches:

1. Utilities should assess and file for approval stand-alone load management programs using custom versions of the Societal (primary), Utility, Participant, and Ratepayer Impact cost-effectiveness tests.
2. For programs that combine load management features with other features (“multi-feature” – energy conservation, EFS, etc.), to the greatest degree possible, the cost-effectiveness analysis should combine the components into a program-based cost-effectiveness evaluation for approval.
3. For reporting purposes, utilities should aim to separate the energy and demand savings for load management, EFS, and energy conservation embedded within multi-feature programs, but not double-count results.
4. Like energy conservation measures, load management program cost-effectiveness will be reviewed at the program level and approved as part of a cost-effective segment (residential, commercial, industrial, etc.)

A. COMMENTS REGARDING COST-EFFECTIVE LOAD MANAGEMENT PROGRAMS

Comments in response to Staff’s proposed guidelines for the inclusion of cost-effective load management programs in CIP were filed by GRE, MERC, OTP, and Xcel.

Comments from GRE focused on concerns that Staff’s guidance could create significant additional work for COUs to an extent that may dissuade COUs from pursuing load management programs.⁹⁵ GRE’s concerns are addressed above in the EFS section of this Decision.

MERC appreciated the load management guidance in Staff’s Proposal and looks forward to working with the CAC to develop a detailed methodology.⁹⁶

OTP was supportive of Staff’s proposed approach and reiterated the importance to “include all ‘multi-feature’ benefits in the cost-effective analysis but be sure to not double count results when reporting for conservation, EFS, or load management reporting.”⁹⁷

Xcel provided the following comments concerning Staff’s Proposal for cost-effective load management programs:

⁹⁴ [NSPM-DERs_08-24-2020.pdf \(https://www.nationalenergyscreeningproject.org\)](https://www.nationalenergyscreeningproject.org).

⁹⁵ GRE Comments at 2.

⁹⁶ MERC Comments at 5.

⁹⁷ OTP Comments at 3-4.

The Proposed Decision proposes that a detailed methodology for cost effectiveness be addressed as part of the CAC group. We also believe that this approach will help ensure cost-effectiveness approaches for all of CIP will share consistency and we look forward to determining more diverse metrics for future load management to account for the changing conditions noted above.

Further, the Company appreciates the guidance from the Department for moving forward quickly on programs and efforts currently being planned as we approach development of our 2024-2026 Triennial and looks forward to incorporating this guidance as part of our ongoing planning process to grow demand response resources.⁹⁸

Commissioner’s Determinations:

The Commissioner thanks Staff for their thoughtful proposal regarding cost-effective load management programs and appreciates those comments submitted by stakeholders. The Commissioner approves Staff’s proposal as written and instructs Staff to work with stakeholders as part of the CAC process to develop cost-effectiveness methodologies for load management programs. Staff will work with the CAC throughout 2022 with the primary task of reviewing and modifying a variety of CIP related cost-effectiveness approaches to be incorporated in 2024-2026 IOU triennial CIP plans.

V. PROPOSED LIST OF PREWEATHERIZATION MEASURES ELIGIBLE FOR INCLUSION IN LOW-INCOME ENERGY CONSERVATION PROGRAMS.

Regarding a list of preweatherization measures eligible for inclusion in low-income energy conservation programs, Staff wrote the following:⁹⁹

Utilities participating in CIP are required to spend a certain percentage of residential gross operating revenue on programs designed specifically for low-income customers.¹⁰⁰ Minn. Stat. §§ 216B.2403, subd. 5(f) and 216B.241, subd. 7(f) now provide that “[u]p to 15 percent of a . . . utility’s spending on low-income programs may be spent on preweatherization measures. A . . . utility is prohibited from claiming energy savings from preweatherization measures toward the . . . utility’s energy savings goal.” In addition, “[t]he commissioner must, by order, establish a list of preweatherization measures eligible for inclusion in low-income programs no later than March 15, 2022.”¹⁰¹

Staff note that spending on preweatherization measures is based on a percentage of the utility’s total spending on low-income programs. Therefore, Staff propose that the total allowable amount of pre-weatherization spending be calculated as a percentage of the utility’s total annual planned low-income spending. As part of pre-weatherization spending, utilities may also contribute money to the Healthy AIR (Asbestos Insulation Removal) account.¹⁰² Requirements for contributing money to this account are detailed in Minn. Stat. §§ 216B.2403, subd. 5(h) and 216B.241, subd. 7(h). Money contributed to

⁹⁸ Xcel Comments at 8.

⁹⁹ Staff’s Proposed Decision at 26-27.

¹⁰⁰ See Minn. Stat. §§ 216B.2403, subd. 5(a) and 216B.241, subd. 7(a).

¹⁰¹ Minn. Stat. §§ 216B.2403, subd. 5(g) and 216B.241, subd. 7(g).

¹⁰² See Minn. Stat. §§ 216B.2403, subd. 5(h) and 216B.241, subd. 7(h).

the Healthy Air account is also counted toward the utility's 15 percent cap on preweatherization measures.¹⁰³

Staff propose the following list of preweatherization measures, when delivered in conjunction with the federal weatherization assistance program, be eligible for inclusion in low-income energy conservation programs:

- Remediation of vermiculite and presumed asbestos containing materials. This includes attic insulation, siding, HVAC-, or pipe-wrap
- Mold and moisture related:
 - Structural repair (foundation, roofing, windows/doors, repair or replacement)
 - Grading for seepage control
 - Gutters/downspouts repair, replacement, or addition
 - Sump pumps – repair, replacement, or addition
 - Black mold removal
- Radon mitigation
- Structural repair or replacement (non-moisture related) – foundation, roofing, windows/doors
- Plumbing leaks / sewer problems.
- Major electrical upgrading – replace K/T, upgrading panel, etc.
- Inaccessible crawl spaces
- Remediation of excessive clutter or hoarding
- Chimney liners
- Integrated pest management (bugs and vermin remediation and blocking)

Comments in response to Staff's proposed list of preweatherization measures were submitted by CEE, Ceres, CenterPoint, ECC, Joint Filers, MERC, OTP and Xcel.

A. COMMENTS REGARDING PREWEATHERIZATION MEASURES BEING ELIGIBLE FOR INCLUSION IN LOW-INCOME PROGRAMS WHEN "DELIVERED IN CONJUNCTION WITH THE FEDERAL WEATHERIZATION ASSISTANCE PROGRAM"

Staff proposed that "the following list of preweatherization measures, when delivered in conjunction with the federal weatherization assistance program, be eligible for inclusion in low-income energy conservation programs. . . ."¹⁰⁴ Stakeholders commenting in response to this language overwhelmingly disagreed with this distinction. ECC stated the following:

For several reasons, ECC believes this phrase should be eliminated from Staff's proposed preweatherization guidance. First, the pre-weatherization language in the CIP statute applies to utility programs, not to the federal Weatherization Assistance Program (WAP). Second, utilities should not be required to install CIP pre-weatherization measures contingent upon the requirements of a federal program. Third, pre-weatherization measures installed through utility CIP programs can remove significant barriers to treating

¹⁰³ *Id.*

¹⁰⁴ Staff's Proposed Decision at 26 (emphasis added).

homes with CIP program funds. Finally, restricting CIP pre-weatherization funds to WAP funded projects undermines the recent Department Decision approving preweatherization measures in CenterPoint Energy's low-income CIP programs, including the Company's Low Income Weatherization, Low Income Rental Efficiency and Non-Profit Affordable Housing programs.¹⁰⁵

CEE commented further that "[w]hile there are several utility low-income conservation programs that leverage federal weatherization funds, there are many that do not. Restricting pre-weatherization measure funding in utility CIPs to programs that also utilize federal weatherization funds is too restrictive and will result in continued barriers to weatherization services for low-income Minnesotans."¹⁰⁶

Commissioner's Determinations:

The Commissioner agrees with stakeholder comments objecting to Staff's proposed requirement that preweatherization measures be allowed only in conjunction with the federal weatherization assistance program. Upon review of the applicable statutory provisions, no explicit or implicit requirement appears to exist applying preweatherization measures exclusively to the federal weatherization assistance project. Language pertaining to this proposed requirement will be removed from the final guidance.

B. COMMENTS REGARDING THE PROPOSED LIST OF PREWEATHERIZATION MEASURES

Stakeholders also provided comments on the list of preweatherization measures eligible for inclusion in low-income energy conservation programs. Generally, these comments involved either agreeing with Staff's proposed list, proposing additional detail to Staff's list, or proposing additional items to Staff's list. Comments from the Joint Filers proposed language clarifying the purpose of the list:

This list is meant to be comprehensive but not exhaustive, and utilities may propose additional measures for the Department to consider, including other health and safety related repairs that are preventing energy efficiency upgrades or installations. If utilities are uncertain whether their proposed pre-weatherization projects are eligible under this proposed list, please contact the Department of Commerce to ensure eligibility.¹⁰⁷

Commissioner's Determinations:

The Commissioner appreciates comments submitted by stakeholders in response to the proposed list. The Commissioner will include clarifying language similar to that proposed by Joint Filers. The Department will host stakeholder meetings this spring to discuss the possibility of a low-income financial incentive and to discuss preweatherization measures. This will provide an additional opportunity to discuss the approved list and determine if additional measures or clarifications are required.

The following list of preweatherization measures are eligible for inclusion in low-income energy conservation programs:

- Ventilation repairs or replacement

¹⁰⁵ ECC Comments at 2.

¹⁰⁶ CEE Comments at 15.

¹⁰⁷ Joint Filers Comments at 3.

- Remediation of vermiculite and presumed asbestos containing materials related to the energy efficiency upgrade
- Mold and moisture related mitigation
 - Structural repair (foundation, walls, roofing, windows/doors, repair or replacement)
 - Grading for seepage control
 - Gutters/downspouts repair, replacement, or addition
 - Sump pumps – repair, replacement, or addition
 - Black mold removal
- Radon mitigation
- Structural repair or replacement (non-moisture related) – foundation, roofing, windows/doors, walls
- Plumbing leaks/sewer problems, including red-tagged plumbing
- Major and minor electrical repair and upgrading related to the energy efficiency upgrade
 - Replace knob and tube wiring, upgrading panel, etc.
 - Upgrading electrical panel, outlets, junction boxes
 - Repairing loose and damaged wiring
- Inaccessible crawl spaces
- Remediation of excessive clutter or hoarding
- Addressing improper or ineffective HVAC venting (e.g., chimney liners)
- Integrated pest management (bugs and vermin remediation and blocking)
- Carbon monoxide and smoke detectors
- Repairing or replacing unsafe dryer venting
- Flue repair
- Gas valve repair
- Sensor repair

This list is meant to be comprehensive but not exhaustive, and utilities may propose additional measures for the Department to consider, including other health and safety related repairs that are preventing energy efficiency upgrades or installations. If utilities are uncertain whether their proposed pre-weatherization projects are eligible under this proposed list, please contact Department of Commerce CIP Staff to ensure eligibility.

C. ADDITIONAL COMMENTS REGARDING PREWEATHERIZATION MEASURES

Spending Cap for Healthy AIR Account

The Joint Filers propose limiting preweatherization spending that may be transferred to the Healthy AIR account. Specifically:

Creating a structure for or limiting the amount of allowed pre-weatherization spend that a utility may transfer to the Healthy AIR account – While we understand the flexibility provided to utilities to meet their “low-income” spending requirement via investment into the Healthy AIR account, we want to ensure that funds do not inadvertently accumulate in this account and lessen funding for other, more immediate pre-weatherization needs to help facilitate energy efficiency and weatherization directly, particularly as funds placed into the Healthy AIR account may not be deployed in the year they are transferred. We are interested in discussing with other parties the potential for

a cap on how much of a utilities' limited pre-weatherization spending can be transferred into the Healthy AIR Account in a given year or triennial, when those dollars can be transferred, or other structures to address this concern. There should be guidance to ensure best efforts are made to spend the dollars on pre-weatherization measures first.¹⁰⁸

Commissioner's Determinations:

The parameters regarding preweatherization spending and utility contributions to the Healthy AIR account are well established in statute for both IOUs and COUs. For IOUs, "Up to 15 percent of a public utility's spending on low-income programs may be spent on preweatherization measures."¹⁰⁹ Identical language exists for COUs.¹¹⁰ In addition:

A public utility may elect to contribute money to the Healthy AIR account under section 216B.2403, subdivision 5, paragraph (h), to provide preweatherization measures to households eligible for weatherization assistance under section 216C.264. Remediation activities must be executed in conjunction with federal weatherization assistance program services. Money contributed to the account counts toward: (1) the minimum low-income spending requirement in paragraph (a); and (2) the cap on preweatherization measures under paragraph (f).¹¹¹

Again, identical language exists for COUs.¹¹² The Commissioner appreciates the Joint Filers concerns regarding the effective distribution of utility preweatherization and Healthy AIR account related spending. However, the Commissioner will not consider "a cap on how much of a utilities' limited pre-weatherization spending can be transferred into the Healthy AIR Account in a given year or triennial." On this point, the statute is clear—up to 15% of a utility's spending on low-income programs may be spent on preweatherization measures and a utility may elect to contribute some or all of that spending to the Healthy AIR account. Therefore, it is for the utility to decide whether and how it will allocate spending to preweatherization measures. The Commissioner suggests engaging utilities directly to discuss optimal distribution of preweatherization spending and reviewing and commenting on preweatherization measures included in utility CIP plans and status reports.

Reporting Preweatherization Spending

The Joint Filers also highlighted the importance of tracking utility spending on preweatherization measures:

Reporting on pre-weatherization spending – as low-income CIP spending from utilities increases, tracking how funds are spent and for whom will be important to help advocates and other parties better able to identify and mitigate potential inequities or gaps in the program outcomes. How this data is reported will be determined in the spring workshops, but could include examples from other utilities providing similar reporting for their own energy efficiency programs, such as ComEd. Such tracking will be critical to understanding which of the pre-weatherization measures proposed here are being addressed with "low-income" CIP spending, where funds are going (e.g. geographically and by housing type),

¹⁰⁸ Joint Filers' Comments at 4-5.

¹⁰⁹ Minn. Stat. § 216B.241, subd. 7(f).

¹¹⁰ Minn. Stat. § 216B.2403, subd. 5(f).

¹¹¹ Minn. Stat. § 216B.241, subd. 7(h).

¹¹² Minn. Stat. § 216B.2403, subd. 5(h).

and why measures are or are not having funds spent on them.¹¹³

Commissioner's Determinations:

As outlined in the Commissioner's January 31, 2022, Decision in the Matter of CenterPoint Energy's 2021-2023 CIP Modification Request, Staff should work with Fresh Energy, the utilities, and other stakeholders to map out the CIP 2024-2026 financial incentive process, including what data would be most helpful to inform the consideration of a low-income shared-savings mechanism and what data would be useful to obtain related to implementation of preweatherization measures.

VI. DECISION

The Commissioner supports Staff's analysis and appreciates their efforts in drafting the recommended ECO technical guidance. The Commissioner also acknowledges and appreciates the efforts of stakeholders participating in the ECO working groups and developing detailed and thoughtful written comments.

The Commissioner approves the following technical guidance for the inclusion of efficient fuel-switching, load management, and preweatherization measures in CIP. Additionally, information regarding specific next steps and future TRMAC and CAC meetings will be distributed by Staff in the coming weeks.

A. TECHNICAL GUIDANCE TO DETERMINE IF A FUEL-SWITCHING IMPROVEMENT MEETS THE REQUIRED CRITERIA AND TO CALCULATE ENERGY SAVINGS

Commissioner determinations regarding the inclusion of efficient fuel-switching improvements in CIP have been incorporated into the technical guidance in Appendix A of this Decision. The Commissioner also issues the following decisions concerning alternative EFS methodologies, the IOU spending cap, and COU involvement in EFS improvements:

Consideration of Alternative Methodologies

The Commissioner acknowledges that while Staff's proposed methodology is both sound and rigorous, alternative methodologies, particularly when proposed during the period when EFS spending is limited (i.e. pre-2026), could provide great value to the collective learning and helpfully inform future iterations of this guidance. The Commissioner, therefore, will allow utilities to propose alternative EFS methodologies for Department review and consideration, under the following conditions:

1. The approved methodology in Appendix A is the assumed methodology to be used for the determination of eligible EFS programs;
2. Utilities wishing to propose an alternative methodology must do so as part of the utility's CIP triennial plan filing or a filed CIP plan modification, allowing for stakeholder review and

comment in a manner consistent with applicable review timelines contained in Minnesota Rules 7690 *et seq.*;

3. Alternative methodologies must demonstrably satisfy all applicable EFS statutory requirements; and
4. Utilities wishing to develop alternative methodologies should engage with Department Staff prior to filing any proposed methodologies.

Efficient Fuel-Switching Spending Cap

Minnesota Statutes § 216B.241, subd. 1c(g) states that “[n]otwithstanding any provision to the contrary, until July 1, 2026, spending by a public utility subject to this section on efficient fuel-switching improvements to meet energy savings goals under this section must not exceed 0.35 percent per year, averaged over three years, of the public utility's gross annual retail energy sales.”

The Commissioner has determined that this is an IOU spending cap on EFS:

1. *Spending Cap Calculation* - Consistent with other CIP spending caps and requirements, spending on EFS improvements must not exceed 0.35 percent per year, averaged over three years, of the IOU's gross operating revenue from non-exempt customers. EFS spending in IOU plans is to be prorated for January 1 - June 30, 2026.
2. *Utilities Subject to EFS Spending Cap* - This spending cap applies to electric IOUs implementing electric end use EFS improvements through Minn. Stat. § 216B.241, subd. 11 and natural gas IOUs implementing electric end use EFS improvements through Minn. Stat. § 216B.241, subd. 12.

Municipal and Cooperative Utilities (COUs)

The Commissioner instructs Staff to prioritize support for COUs who intend to include EFS and load management programs in the next CIP planning cycle. This support should include:

- Working with COUs to propose and develop a simplified EFS methodology. This simplified methodology should provide COUs with a less burdensome pathway for establishing compliance with EFS statutory requirements.
 - Working with COUs to discuss a practical level for which cost-effectiveness should be evaluated (e.g. measure, program, segment, or portfolio).
 - Extending the submission date for COU 2021 results and 2023 (and beyond) plans from June 1, 2022 to August 1, 2022, to provide COUs and the Department with an extended planning period.
- B. TECHNICAL GUIDANCE TO DETERMINE IF A LOAD MANAGEMENT MEASURE MEETS NECESSARY COST-EFFECTIVENESS REQUIREMENTS**

The Commissioner approves Staff's load management guidance as summarized below and instructs Staff to work with stakeholders as part of the CAC process to develop cost-effectiveness methodologies for

load management programs. Staff will work with the CAC throughout 2022 with the primary task of reviewing and modifying a variety of CIP related cost-effectiveness approaches to be incorporated in 2024-2026 IOU triennial CIP plans.

Utility Load Management Programs

For IOUs, Minn. Stat. § 216B.241, subd. 13(a) provides that “[a] public utility may include in the utility's plan required under subdivision 2 programs to implement load management activities, or combinations of energy conservation improvements, fuel-switching improvements, and load management activities. For each program the public utility must provide a proposed budget, cost-effectiveness analysis, and estimated net energy and demand savings.”

Given the heavy emphasis placed on load management programs in § 216B.2401(a), language relating to public utility load management programs (other than sections discussing shareholder incentive plans) will also be applied to consumer-owned utility load management programs.

Load Management Program Cost-Effectiveness

Ultimately, load management program cost-effectiveness determines eligibility for inclusion in CIP. A detailed methodology for load management program cost-effectiveness will be developed as part of the CAC's work.

As the next CAC review process will not likely be completed until the beginning of 2023 (in preparation for IOU 2024-2026 triennial plan development), however, utilities can use an interim custom process for evaluating load management program cost effectiveness. In this context, custom process means that COUs and IOUs can propose to the Department for review and approval their proposed load management programs and associated methods of estimating cost-effectiveness. When proposing custom cost-effectiveness methodologies for load management programs, utilities shall follow the demand response cost-effectiveness guidance described in Chapter 7 of the National Standard Practice Manual (NSPM).¹¹⁴

In summary, for utilities wishing to submit load management programs with custom cost-effectiveness approaches:

1. Utilities should assess and file for approval stand-alone load management programs using custom versions of the Societal (primary), Utility, Participant, and Ratepayer Impact cost-effectiveness tests.
2. For programs that combine load management features with other features (“multi-feature” – energy conservation, EFS, etc.), to the greatest degree possible, the cost-effectiveness analysis should combine the components into a program-based cost-effectiveness evaluation for approval.
3. For reporting purposes, utilities should aim to separate the energy and demand savings for load management, EFS, and energy conservation embedded within multi-feature programs, but not double-count results.

¹¹⁴ [NSPM-DERs_08-24-2020.pdf \(https://www.nationalenergyscreeningproject.org\)](https://www.nationalenergyscreeningproject.org).

4. Like energy conservation measures, load management program cost-effectiveness will be reviewed at the program level and approved as part of a cost-effective segment (residential, commercial, industrial, etc.)

C. LIST OF PREWEATHERIZATION MEASURES ELIGIBLE FOR INCLUSION IN LOW-INCOME ENERGY CONSERVATION PROGRAMS

The Commissioner approves the following list of preweatherization measures as eligible for inclusion in low-income energy conservation programs:

- Ventilation repairs or replacement
- Remediation of vermiculite and presumed asbestos containing materials related to the energy efficiency upgrade
- Mold and moisture related mitigation
 - Structural repair (foundation, walls, roofing, windows/doors, repair or replacement)
 - Grading for seepage control
 - Gutters/downspouts repair, replacement, or addition
 - Sump pumps – repair, replacement, or addition
 - Black mold removal
- Radon mitigation
- Structural repair or replacement (non-moisture related) – foundation, roofing, windows/doors, walls
- Plumbing leaks/sewer problems, including red-tagged plumbing
- Major and minor electrical repair and upgrading related to the energy efficiency upgrade
 - Replace knob and tube wiring, upgrading panel, etc.
 - Upgrading electrical panel, outlets, junction boxes
 - Repairing loose and damaged wiring
- Inaccessible crawl spaces
- Remediation of excessive clutter or hoarding
- Addressing improper or ineffective HVAC venting (e.g., chimney liners)
- Integrated pest management (bugs and vermin remediation and blocking)
- Carbon monoxide and smoke detectors
- Repairing or replacing unsafe dryer venting
- Flue repair
- Gas valve repair
- Sensor repair

This list is meant to be comprehensive but not exhaustive, and utilities may propose additional measures for the Department to consider, including other health and safety related repairs that are preventing energy efficiency upgrades or installations. If utilities are uncertain whether their proposed preweatherization projects are eligible under this proposed list, they should contact Department of Commerce CIP Staff to ensure eligibility.

The Department will host stakeholder meetings this spring to discuss the possibility of a low-income

financial incentive and also to discuss preweatherization measures. This will provide an additional opportunity to discuss the approved list and determine if additional measures or clarifications are required.

The Commissioner thanks Staff and stakeholders for their important contributions to this technical guidance.

BY ORDER OF THE COMMISSIONER



Dated: March 15, 2022

Grace Arnold
Commissioner
Minnesota Department of Commerce

APPENDIX A: TECHNICAL GUIDANCE TO DETERMINE IF AN EFFICIENT FUEL-SWITCHING IMPROVEMENT MEETS REQUIRED CRITERIA AND TO CALCULATE ASSOCIATED ENERGY SAVINGS

The Technical Guidance provides a statutory summary relating to efficient fuel-switching (EFS) elements of the ECO Act, a discussion of general concepts related to EFS, step-by-step guidance to utilities to assess and qualify EFS improvements, and additional considerations.

A. STATUTORY SUMMARY

The ECO Act provides specific qualifying criteria for EFS programs to be implemented by electric IOUs,¹¹⁵ natural gas IOUs,¹¹⁶ and COUs¹¹⁷.

EFFICIENT FUEL-SWITCHING DEFINITION

Minn. Stat. § 216B.2402 subd. 4 defines an “efficient fuel-switching improvement” to mean a project that:

- replaces a fuel used by a customer with electricity or natural gas delivered at retail by a utility subject to section 216B.2403 or 216B.241;
- results in a net increase in the use of electricity or natural gas and a net decrease in source energy consumption on a fuel-neutral basis;
- otherwise meets the criteria established for consumer-owned utilities in section 216B.2403, subdivision 8, and for public utilities under section 216B.241, subdivisions 11 and 12; and
- requires the installation of equipment that utilizes electricity or natural gas, resulting in a reduction or elimination of the previous fuel used.

EFFICIENT FUEL-SWITCHING AND ELECTRIC IOUs

Minn. Stat. § 216B.241 subd. 11 provides that an EFS improvement is deemed efficient for an electric IOU if, applying the technical criteria established under section 216B.241, subdivision 1d, paragraph (e), the improvement meets the following criteria, relative to the fuel that is being displaced:

- results in a net reduction in the amount of source energy consumed for a particular use, measured on a fuel-neutral basis;
- results in a net reduction of statewide greenhouse gas emissions as defined in section 216H.01, subdivision 2, over the lifetime of the improvement. For an EFS improvement installed by an electric utility, the reduction in emissions must be measured based on the hourly emission profile of the electric utility, using the hourly emissions profile in the most recent resource plan approved by the commission under section 216B.2422;
- is cost-effective, considering the costs and benefits from the perspective of the utility, participants, and society; and
- is installed and operated in a manner that improves the utility's system load factor.

¹¹⁵ Minn. Stat. § 216B.241 subd. 11

¹¹⁶ Minn. Stat. § 216B.241 subd. 12

¹¹⁷ Minn. Stat. § 216B.2403, subd. 8

EFFICIENT FUEL-SWITCHING AND NATURAL GAS IOUs

For natural gas IOUs, Minn. Stat. § 216B.241 subd. 12 provides that a public utility that provides natural gas service to Minnesota retail customers may propose one or more programs to install electric technologies that reduce the consumption of natural gas by the utility's retail customers as an energy conservation improvement. The Commissioner may approve a proposed program if the Commissioner, applying the technical criteria developed under section 216B.241, subdivision 1d, paragraph (e), determines that:

- the electric technology to be installed meets the criteria established under section 216B.241, subdivision 11, paragraph (d), clauses (1) and (2); and
- the program is cost-effective, considering the costs and benefits to ratepayers, the utility, participants, and society.

EFFICIENT FUEL-SWITCHING AND ELECTRIC AND NATURAL GAS COUs

For electric and natural gas COUs, Minn. Stat. § 216B.2403 subd. 8 provides that a fuel-switching improvement is deemed efficient if, applying the technical criteria established under section 216B.241, subdivision 1d, paragraph (e), the improvement, relative to the fuel being displaced:

- results in a net reduction in the amount of source energy consumed for a particular use, measured on a fuel-neutral basis;
- results in a net reduction of statewide greenhouse gas emissions, as defined in section 216H.01, subdivision 2, over the lifetime of the improvement. For an EFS improvement installed by an electric COU, the reduction in emissions must be measured based on the hourly emissions profile of the consumer-owned utility or the utility's electricity supplier, as reported in the most recent resource plan approved by the commission under section 216B.2422. If the hourly emissions profile is not available, the Commissioner must develop a method consumer-owned utilities must use to estimate that value;
- is cost-effective, considering the costs and benefits from the perspective of the COU, participants, and society; and
- is installed and operated in a manner that improves the COU's system load factor.

ADDITIONAL CONSIDERATIONS

- The ECO Act places limits on the percentage of a utility's spending (through 2026) and a consumer-owned utility's net energy savings goal that can be met through EFS improvements.
- Natural gas IOU EFS programs are considered energy conservation for the purposes of the CIP program.¹¹⁸ Therefore, gas IOU EFS program energy savings count directly toward the energy savings goal under section 216B.241, subdivision 1c.
- The ECO Act defines "fuel" as "energy, including electricity, propane, natural gas, heating oil, gasoline, diesel fuel, or steam, consumed by a retail utility customer."

¹¹⁸ Minn. Stat. § 216B.241, subd. 12(a).

B. PROCESS FOR QUALIFYING, EVALUATING AND REPORTING EFFICIENT FUEL-SWITCHING MEASURES

Utilities shall use the following step-by-step approach to assess measures and projects for qualification as EFS improvements.

Step 1 – Confirm Starting Fuel to Ending Fuel Type and Utility Eligibility

Subject: EFS eligibility based on starting and ending fuel types.

Statutory reference: According to Minn. Stat. § 216B.2402 subd. 4, an “efficient fuel-switching improvement” means a project that:

- (1) replaces a fuel used by a customer with electricity or natural gas delivered at retail by a utility subject to section 216B.2403 or 216B.241;
- ...
- (4) requires the installation of equipment that utilizes electricity or natural gas, resulting in a reduction or elimination of the previous fuel used.

Minn. Stat. § 216B.2402, subd. 8, defines fuel to mean “energy, including electricity, propane, natural gas, heating oil, gasoline, diesel fuel, or steam”

Instructions and Guidance:

- Allowing EFS programs in ECO that are detailed for electric IOUs,¹¹⁹ natural gas IOUs,¹²⁰ and COUs¹²¹ and have an electric ending fuel type.
- Utilities wishing to propose EFS programs with a natural gas ending fuel type may do so on a custom basis¹²² and must demonstrate that the measure or project is statutorily permissible and meets the necessary requirements of these guidelines. These custom proposals shall be proposed as part of the utility’s CIP triennial plan filing or filed CIP plan modification, and allow for stakeholder review and comment.
- EFS Improvements may include both electricity and gas components (e.g., gas supplemental heating for an air source heat pump).
- Only the fuels listed in § 216B.2402 subd. 8. should be included as eligible starting source fuels. Programs involving additional fuel types should be considered by the Department on a custom basis if a utility proposes such a scenario.

¹¹⁹ Minn. Stat. § 216B.241 subd. 11

¹²⁰ Minn. Stat. § 216B.241 subd. 12

¹²¹ Minn. Stat. § 216B.2403, subd. 8

¹²² For purposes of this Guidance, Custom basis is defined similar to that applied to CIP Program Administrators proposing approaches that are either not covered in or deviate from the Technical Reference Manual. Program Administrators should submit such proposals for Department approval, either as part of their Triennial Plans or in program modification filings.

Process for applying this criterion: As a first step, utilities should confirm that the EFS improvement meets the starting fuel and ending fuel eligibility requirements. This can be included in the measure or project’s description, clearly outlining the starting fuel and the ending fuel. The description must also describe how the technology either reduces or eliminates the starting fuel.

Step 2 – Determine efficient fuel-switching improvement, baseline technology, and baseline comparison

Subject: Establishing baselines against which EFS improvements can be compared.

Statutory reference: No specific statutory reference.

Instructions and Guidance:

- Development of EFS improvement baselines and assumptions to be carried out as part of the Technical Reference Manual (TRM) development process, starting with TRM version 4.0. While these baselines and assumptions are being developed, utilities may, in the interim, propose baselines and assumptions on a custom basis (as described above).
- The Department encourages development of studies to collect baseline and EFS technology information, measure and verify EFS savings, and evaluate EFS program processes.
- EFS improvements should use the TRM method of determining comparable technologies based on a reasonable replacement; however, the TRM should also more clearly define what constitutes a reasonable replacement.

Process for applying this criterion: It is anticipated that the TRM process will provide general assumptions for EFS measures that are deemed for utilities to include in CIP portfolios. In the interim, utilities should include either as part of their triennial plan filings or in program modifications, explanations of proposed EFS improvements to a sufficient level of detail for the Department to assess the appropriateness of selected baselines. Utilities should also establish processes to collect the information identified above for publication in annual reports.

Step 3 – Energy change analysis, source energy consumption, and GHG (CO₂) emissions

Step 3.1 – Site and Source Energy Change Analysis

Subject: This step establishes whether an EFS improvement results in a net increase in electricity or natural gas use and whether there is an overall net decrease in energy consumption when incorporating sources that produced the energy consumed on site.

Statutory references: Minn. Stat. § 216B.2402, sub. 4(2) requires that the EFS project “results in a net increase in the use of electricity or natural gas and a net decrease in source energy consumption on a fuel-neutral basis.”

Both Minn. Stat. §§ 216B.2403, subd. 8(b) and 216B.241, subd. 11(e) state that “[f]or purposes of this subdivision, “source energy” means the total amount of primary energy required to deliver energy services, adjusted for losses in generation, transmission, and distribution, and expressed on a fuel-neutral basis.”

For technologies such as electric vehicles, the baseline energy use would use a standardized, average factor based on BTU/gallon or BTU/therm.

Instructions and Guidance:

- To determine whether an EFS improvement results in a net increase in the use of electricity or natural gas, utilities should use these steps:
 - Identify the EFS technology, along with any ancillary components (such as back up heating for an air source heat pump) that enable it to meet the comparable technology requirement discussed in Step 2 (designate the EFS technology as either electric or natural gas based on the predominant fuel of the EFS project).
 - Estimate the energy use (electricity, natural gas, or some combination) of the baseline technology in kWh, therms.
 - Estimate the energy use (electricity, natural gas, or some combination) of the post-condition using the EFS technology.
 - Compare the change in electricity, natural gas, or combination between the baseline technology and the post condition incorporating the EFS technology.
 - For electric EFS technologies, determine if the project results in a net increase in the use of electricity relative to the baseline technology. For natural gas EFS technologies, determine if the project results in a net increase in the use of natural gas relative to the baseline technology.
- Utilities should strive to use hourly EFS improvement load shape data. If this is not available, the utility should use another reasonably accurate estimate of the EFS improvement's time-based energy use. It is assumed that the baseline technology has the same load shape as the EFS Improvement.
- In calculating source energy impacts, particularly as relates to electrification EFS improvements, utilities should use hourly forecasted electricity generation data (or another reasonably accurate estimate of forecasted electricity generation) over the measure lifetime.
- The source energy impacts should be based on, to the extent available, hourly heat rate values using the electricity generation mix that corresponds to the expansion plan with a sufficient amount of electrification load to generate a new expansion plan (this is specifically applicable to electricity as the ending fuel).¹²³
- Recognizing that not all generation and transmission entities may have access to Integrated Resource Planning (IRP) Capacity Expansion Models (CEMs) that calculate emissions (and, have hourly heat rates derived using the method in Step 3.2) on an hourly (8,760) basis, the following should apply based on capabilities:
 - Option 1 (Utility with IRP and CEMS with hourly emissions) – Utility develops hourly heat rates over the forecasted time horizon based on the method described in Section 3.2.
 - Option 2 (Utility or generation and transmission entity with IRP but without capability to produce hourly emissions) - The Department will provide heat rate factors that the utility can use to complete this step.
 - Option 3 (Utilities that receive electricity from an entity that does not have capabilities described in Option 1 or 2) – The Department will provide heat rate factors that the utility can use to complete this step.
 - Option 4 (Natural gas utilities that do not have access to electricity data) – The Department will provide heat rate factors applicable to the utility's service territory.

¹²³ See Step 3.2.

- Heat rates associated with electricity generation for individual primary energy sources should be based on the utility’s most current data, noting that the following primary energy resources shall use a conversion rate of 3,412 BTU/kWh – solar, wind, hydro, nuclear.
- The following heat rates may be used for other baseline fuels (utilities can provide alternative estimates):¹²⁴
 - Propane: 100,000 BTU/therm or 91,542 BTU/gallon
 - Gasoline: 120,286 BTU/gallon
 - Diesel fuel or heating oil: 137,381 BTU/gallon
 - Source to site losses associated with transmission and distribution of electricity and natural gas are utility-specific and should be included in utility triennial plan filings and program modifications.
- Utilities are permitted to propose alternative methodologies for Department review, either as program modifications or as part of their Triennial filings.

Process for applying this criterion: Utilities shall submit with triennial plan filings or program modifications descriptions of the methodology used to determine if an EFS improvement meets Step 3.1, along with any other technical assumptions.

Step 3.2 – Calculate Greenhouse Gas (GHG) Emissions Savings

Subject: This step assesses whether an EFS improvement results in a net reduction in statewide GHG emissions, as defined in Minnesota Statutes Section 216H.01, based on the utility’s hourly emissions profile. If an hourly profile is not available, COUs can use a method developed by the Department.

Statutory references:

- For COUs. Minn. Stat. § 216B.2403 subd. 8(a) provides that a fuel-switching improvement is deemed efficient if, applying the technical criteria established under section 216B.241, subdivision 1d, paragraph (e), the improvement, relative to the fuel being displaced:
 - (2) results in a net reduction of statewide greenhouse gas emissions, as defined in section 216H.01, subdivision 2, over the lifetime of the improvement. For an EFS improvement installed by an electric consumer-owned utility, the reduction in emissions must be measured based on the hourly emissions profile of the consumer-owned utility or the utility's electricity supplier, as reported in the most recent resource plan approved by the commission under section 216B.2422. If the hourly emissions profile is not available, the commissioner must develop a method consumer-owned utilities must use to estimate that value;

¹²⁴ <https://www.eia.gov/energyexplained/units-and-calculators/british-thermal-units.php>. Gasoline heat content, for example, can vary significantly based on ethanol content. Therefore, utilities may want to propose their own factors.

- For IOUs: Minn. Stat. § 216B.241 subd. 11(d) provides that a fuel-switching improvement is deemed efficient if, applying the technical criteria established under section 216B.241, subdivision 1d, paragraph (e), the improvement meets the following criteria, relative to the fuel that is being displaced:
 - (2) results in a net reduction of statewide greenhouse gas emissions as defined in section 216H.01, subdivision 2, over the lifetime of the improvement. For an EFS improvement installed by an electric utility, the reduction in emissions must be measured based on the hourly emission profile of the electric utility, using the hourly emissions profile in the most recent resource plan approved by the commission under section 216B.2422;
- Minn. Stat. § 216B.241, subd. 2(k): “A public utility filing a conservation and optimization plan that includes an efficient fuel-switching program to achieve the utility's energy savings goal must, as part of the filing, demonstrate by a comparison of greenhouse gas emissions between the fuels that the requirements of subdivisions 11 or 12 are met, as applicable, using a full fuel-cycle energy analysis.”
- Minn. Stat. § 216B.2403, subd. 3(l): “A consumer-owned utility filing a conservation and optimization plan that includes an efficient fuel-switching program to achieve the utility's energy savings goal must, as part of the filing, demonstrate by a comparison of greenhouse gas emissions between the fuels that the requirements of subdivision 8 are met, using a full fuel-cycle energy analysis.”

Instructions and Guidance:

- GHG emissions refer to emissions of carbon dioxide (CO₂), methane (CH₄) and nitrous oxides (NO_x). These three gases will be converted to carbon dioxide-equivalent (CO₂e) emissions. In the context of this Guidance, life-cycle CO₂e emissions are defined as the total CO₂e emissions over the measure lifetime of the EFS measure technology.
- Utilities with the capability to do so, calculate downstream GHG impacts from electricity production based on a four-step process:
 - Step A -- Increased load from EFS measures (MWh). Using a CEM, the utility adds a new load using an appropriate annual electrification load shape for each year of the planning horizon and reruns the CEM to obtain the new expansion plan and hourly (8760) outcomes that characterize the new scenario. This added load is used to reevaluate the generation needed in the CEM and rerun the CEM to obtain a new expansion plan with new hourly GHG emissions values.¹²⁵

¹²⁵ Due to limitations in IRP modeling software, small changes in load may not yield accurate expansion results. Therefore, a significantly high enough increase in load may be required to induce a reallocation of generation resources (including procurement of new resources) due to the load increase. See the Department's October 15, 2021 comments in Docket No. E002/RP-19-368 at pages 15-18 for a discussion of EnCompass' modeling limits.

- Step B-- Utility-Specific Marginal GHG Emissions Factors (lbs./MWh). The hourly CO₂e emissions associated with Step A (adjusted for imports and exports) would then be compared to the hourly CO₂e emissions for the most recently approved (baseline) expansion plan (adjusted for imports and exports). The resulting change in hourly emissions (lbs.) would then be divided by the hourly additional load (MWh) to derive an hourly emissions factor (lbs./MWh) for each year of the expansion plan's time horizon.
- Step C – Including Upstream Emissions. The hourly marginal emissions factor calculated in Step B includes information about the marginal fuel source serving load during each specific hour. In general, the highest marginal emission factors occur when coal plants operate, natural gas plants have intermediate marginal emission factors, and renewables have the lowest marginal emission factors. Keeping this observation in mind, the lifecycle multiplier for coal will be applied for hourly marginal emission factor from Step B (from combustion) above a certain threshold. Similarly, if the hourly marginal emission factor is within an intermediate range, the lifecycle multiplier for natural gas will be applied. And if the hourly marginal emission factor is within the lowest range, a lifecycle multiplier of 1 will be applied. Each of these threshold ranges should be wide enough to accommodate different types of power plant technologies that might operate using the same fuel source. Lifecycle multipliers for each fuel source should be calculated as the ratio of the lifecycle emission factor of that resource (obtained from GREET) and the combustion emission factor of that resource (obtained from eGRID or EIA). The Department will periodically update multiplier values and the threshold ranges and provide them to utilities.
- Step D – The utility would then multiply the hourly lifecycle CO₂e lbs./MWh factor from Step C with the hourly EFS improvement's load shape over the measure's lifetime and subtract the baseline measure fuel's hourly CO₂e factor. A positive number indicates that the EFS reduces GHGs while a negative number indicates that the EFS increases GHGs. A negative result means the measure would not pass Step 3.2.
- Recognizing that not all generation and transmission entities may have access to CEMs that calculate emissions on an hourly (8,760) basis, the following should apply based on capabilities:
 - Option 1 (Utility with IRP and CEMS with hourly emissions) – Utility develops marginal hourly emissions over the forecasted time horizon based on the method described above;
 - Option 2 (Utility or generation and transmission entity with IRP but without capability to produce hourly emissions) - The Department will provide marginal emissions factors that the utility can use to complete this step;
 - Option 3 (Utilities that receive electricity from an entity that does not have capabilities described in Option 1 or 2) – The Department will provide marginal emissions factors that the utility can use to complete this step;
 - Option 4 (Natural gas utilities that do not have access to electricity data) – The Department will provide marginal emissions factors applicable to the utility's service territory.
- The full fuel-cycle natural gas factor that utilities shall use is 145.86 lbs./Dth.

- The Department will engage a consultant or research entity to derive lifecycle multipliers and thresholds (described in Step C) for other fuels to include gasoline, diesel fuel, propane, and fuel oil. In the interim, utilities wishing to propose EFS improvements that use these beginning fuels can propose factors using the custom process described in previous sections.
- Utilities are permitted to propose alternative methodologies for Department review, either as program modifications or as part of their Triennial filings.

Process for applying this criterion: Utilities shall submit with their triennial plan filings or program modifications descriptions of the analysis used to determine if the EFS improvement meets Step 3.2, along with relevant assumptions.

STEP 4 - IMPROVE UTILITY SYSTEM LOAD FACTOR

Subject: This step requires that utilities determine whether an EFS Improvement is operated in a manner that serves to improve the utility’s system load factor.

Statutory references: A fuel-switching improvement is deemed efficient if, applying the technical criteria established ... the improvement, relative to the fuel being displaced: (4) is installed and operated in a manner that improves the ... utility's system load factor.¹²⁶

Instructions and Guidance:

- Utilities proposing EFS Improvements for Department approval should include an analysis of how the measure or (EFS-focused) program affects the utility’s system load factor (whether the utility is winter or summer peaking) and how the measure can be operated in a manner that improves the utility’s system load factor; and
- Utilities should describe what elements they have incorporated into the EFS improvement offering to improve the utility’s system load factor relative to the electricity system without the EFS improvement.

Process for applying this criterion: Utilities shall submit with their triennial plan filings or program modifications descriptions of the elements incorporated into the EFS improvement offering or program that meets Step 4, along with relevant assumptions.

STEP 5 – INTEGRATION OF RENEWABLE ENERGY INTO THE ELECTRIC SYSTEM

Subject: This step directs the Department to consider, for EFS improvements that deploy electric technologies, whether the measure can be operated to facilitate the integration of variable renewable energy. This provision only applies to public utilities.

Statutory references: Minn. Stat. § 216B.241, subd. 11(b). “For fuel-switching improvements that require the deployment of electric technologies, the Department must also consider whether the fuel-switching improvement can be operated in a manner that facilitates the integration of variable renewable energy into the electric system.”

¹²⁶ Minn. Stat. § 216B.2403, subd. 8(a) and § 216B.241, subd. 11(d).

Instructions and Guidance:

- Utilities in their triennial (and other relevant) filings should describe features that have been incorporated with EFS electrification Improvements that serve to increase the integration of renewable energy into the electric system.

Process for applying this criterion: Utilities shall include in triennial plan filings or program modifications descriptions of the way the EFS electrification measures can be operated to increase the integration of renewable energy into the electric system.

STEP 6 – COST EFFECTIVENESS CALCULATIONS

Subject: This step requires that electric and gas utilities perform cost-effectiveness evaluations of EFS improvements and determine whether the measure is cost-effective based on a number of traditional energy efficiency cost-effectiveness tests.

Statutory references: (electric utilities) “A fuel-switching improvement is deemed efficient if ... relative to the fuel being displaced ... (the improvement) is cost-effective, considering the costs and benefits from the perspective of the ... utility, participants, and society.”¹²⁷

(natural gas utilities) “[A] public utility that provides natural gas service to Minnesota retail customers may propose one or more programs to install electric technologies that reduce the consumption of natural gas by the utility's retail customers as an energy conservation improvement. The commissioner may approve a proposed program if the commissioner ... determines that ... the program is cost-effective, considering the costs and benefits to ratepayers, the utility, participants, and society.”¹²⁸

Instructions and Guidance:

- EFS cost-effectiveness will be reviewed and approved at the program level.
- Electric and natural utilities, in proposing EFS improvements for Department approval, should include cost-effectiveness evaluations based on the Societal Test, the Utility Test, and the Participant Test (natural gas utilities shall also include the Ratepayer Impact Test in their evaluations).
- The primary cost-effectiveness determinant regarding whether an EFS measure is deemed “efficient,” according to the ECO Act, will be whether it passes the Societal Test, unless or until the Department updates the primary test Minnesota utilities will use to evaluate demand-side programs.¹²⁹
- For natural gas utilities that do not have access to relevant electric information or an electric cost-effectiveness model, the Department will provide the requisite information and tools to enable the utility to conduct EFS cost-effectiveness testing for switches to electricity measures.

¹²⁷ Minn. Stat. § 216B.2403, subd. 8(a)(3) and Minn. Stat. § 216B.241, subd. 11(d)(3).

¹²⁸ Minn. Stat. § 216B.241, subd. 12(a)(2).

¹²⁹ Special attention must also be paid to the costs to consumers through the participant test. Marketing EFS measures to consumers without them knowing that their costs may increase is unfair to the consumer and could undermine the public’s trust in investing in other EFS measures.

- Utilities implementing an EFS improvement for customers whom they do not provide either the beginning or the ending fuel shall, nonetheless, include the avoided (and increased supply as may be the case) costs for the non-served fuel in their cost-effectiveness calculations.
- Utilities should strive to use up-to-date measure load shapes for EFS improvements to help improve the accuracy of cost-effectiveness and other program-related estimates.
- It is anticipated that specific measure-based inputs to cost-effectiveness tests will be considered as part of revisions to the TRM, particularly for EFS Improvements that will be implemented numerous times.
- Utilities may include other features, such as load management, in their cost-effectiveness calculations, although such combinations should incorporate costs and benefits associated with the additional features.
- Until such time as the Department has adopted a revised approach for utility cost-effectiveness testing as part of the CAC, utilities may propose, on a custom basis, ways of assessing EFS Improvements based on the cost-effectiveness tests described herein.

In this context, custom process means that utilities can propose to the Department for review and approval EFS improvements and associated methods of estimating cost-effectiveness. When submitting a proposed custom EFS improvement that has an electric ending fuel, it is recommended that utilities follow the electrification cost-effectiveness guidance described in Chapter 10 of the National Standard Practice Manual (NSPM).¹³⁰

Process for applying this criterion: Utilities shall submit with their triennial plan filings or program modifications descriptions of the elements incorporated into the EFS improvement offering or program that meets this step, along with relevant assumptions.

C. ADDITIONAL CONSIDERATIONS

This section discusses issues associated with the EFS aspects of the ECO Act that are not prescribed by statute but are, nonetheless, an important part of this Guidance.

REPORTING EFFICIENT FUEL-SWITCHING IMPROVEMENTS

Subject: How should utilities report EFS improvements?

Instructions and Guidance:

- Utilities implementing EFS measures shall create an EFS segment within their CIP portfolios. Utilities can opt to bundle EFS measures into programs. Similarly, these programs can be included in the CIP segment that the utility deems most appropriate. However, to ensure that EFS improvements can be assessed and tracked separately from other aspects of utilities' CIP programming, utilities will also, as part of their CIP plans and annual reports, present efficient fuel-switching improvements separately.

¹³⁰ [NSPM-DERs_08-24-2020.pdf \(https://www.nationalenergyscreeningproject.org\)](https://www.nationalenergyscreeningproject.org).

- Savings for EFS measures shall be reported for site-based savings by converting the individual measure/project BTU savings to electric or gas savings (applicable to the reporting utility – dual-fuel utilities will report savings based on the primary ending fuel) using standard kWh/BTU and therms/BTU conversions. First-year savings are based on first year, while lifetime savings will be based on annualized BTU savings multiplied times the kWh/BTU for each year of the EFS’s Measure lifetime.
- Electric and gas utilities shall use the same baseline and savings estimations for EFS measures that both may offer in overlapping service territories and, as discussed in Step 2, such savings estimates should be based on comparable technology (and reflected, where applicable, in the TRM).
- To reduce customer confusion and “incentive competition”, electric and utilities offering the same or similar EFS measures in overlapping service territories should coordinate offerings and aim for consistency in terms of incentive levels and other features.
- IOUs that opt to count net benefits, from EFS improvements that are part of programs that have energy efficiency as their primary purpose and effect, shall identify in their triennial plans (or other appropriate filings) those programs for which they plan to count net benefits, along with how the net benefits will be estimated. In turn, the utility should provide in its annual report the resulting net benefits and how the estimation method was consistent with the proposed approach.¹³¹
- In Annual Reports, utilities should report, at a minimum, the following:
 - Number of EFS improvements during the program year.
 - Number of EFS customer participants during the program year.
 - Increases of electricity energy consumption (kWh) and demand (kW) from EFS improvements during the program year (this reporting requirement applies to both electric and natural gas utilities).¹³²
 - Overall reductions in both site and source energy use, in BTUs and in the relevant fuel denominations (kWh, therms, gallons [gasoline, diesel], etc.) from EFS during the program year.
 - Overall reductions in GHGs from EFS during the program year.
- To help inform the public about EFS programs, their impacts and ways utilities are continuously improving their EFS programs, utilities should also consider including in their Annual Reports other useful information, such as: the types of EFS improvements incentivized by category (e.g. water heating; space heating/cooling, EVs, etc.); learnings from any recent reports or analyses related to EFS; changes to EFS offerings during the year, or mechanisms/features incorporated to broaden customer access and participation.

¹³¹ See Minn. Stat. §216B.241, Subd. 11(b).

¹³² See Minn. Stat. §216B.241, Subd. 1c(f).

PROGRAM DESIGN CONSIDERATIONS

Subject: Utilities should design programs that incorporate EFS measures to maximize customer participation, and customer and system benefits.

Instructions and Guidance:

- In designing programs, utilities should consider ways to package EFS improvements with other energy efficiency measures (such as shell improvements and other EE upgrades), demand response features and complementary rate designs that can serve to maximize the measure's benefits to customers and utility systems.
- Utilities should consider ways to design and deliver programs to maximize customer participation and per-measure contributions to GHG reductions, improve system efficiency and enhance the measure's ongoing benefits.
- Utilities should give strong consideration to equity as it relates to EFS improvements, such as ensuring that all customers have access to EFS improvement opportunities and can directly benefit from EFS improvements that would lower energy bills.
- Utilities should incorporate into their program designs ways to periodically measure and verify that program results are consistent with expectations and to facilitate revisions to programs to maximize program benefits.

COMBINED HEAT AND POWER

Combined heat and power projects are not considered efficient fuel-switching. Minn. Stat. §216B.2402 subd. 6 defines "waste heat that is recovered and converted into electricity or used as thermal energy" as "energy conservation." Further, Minn. Stat. § 216B.2402 subd. 22 defines "waste heat recovered and used as thermal energy" as "capturing heat energy that would be exhausted or dissipated to the environment from machinery, buildings, or industrial processes, and productively using the recovered thermal energy where it was captured or distributing it as thermal energy to other locations where it is used to reduce demand-side consumption of natural gas, electric energy, or both." CHP projects are permitted within CIP as an energy conservation measure in a manner consistent with Minn. Stat. §§ 216B.241 subd. 1c(d) and 216B.2403 subd. 2(a)(4).

/ar

CERTIFICATE OF SERVICE

I, Sharon Ferguson, hereby certify that I have this day, served copies of the following document on the attached list of persons by electronic filing, certified mail, e-mail, or by depositing a true and correct copy thereof properly enveloped with postage paid in the United States Mail at St. Paul, Minnesota.

**Minnesota Department of Commerce
Decision**

Docket No. E, G999/CIP-21-837

Dated this 15th day of March 2022

/s/Sharon Ferguson

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Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	OFF_SL_21-837_CIP-21-837
Greg	Ridderbusch	greg.ridderbusch@connexusenergy.com	Connexus Energy	14601 Ramsey Boulevard Ramsey, MN 55303	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Valeria	Rincon	vrincon@nrdc.org	Natural Resources Defense Council	20 N Upper Wacker Dr #1600 Chicago, IL 60606	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Christopher	Schoenherr	cp.schoenherr@smmpa.org	SMMPA	500 First Ave SW Rochester, MN 55902-3303	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Will	Seuffert	Will.Seuffert@state.mn.us	Public Utilities Commission	121 7th PI E Ste 350 Saint Paul, MN 55101	Electronic Service	Yes	OFF_SL_21-837_CIP-21-837
Ken	Smith	ken.smith@districtenergy.com	District Energy St. Paul Inc.	76 W Kellogg Blvd St. Paul, MN 55102	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Anna	Sommer	ASommer@energyfuturesgroup.com	Energy Futures Group	PO Box 692 Canton, NY 13617	Electronic Service	No	OFF_SL_21-837_CIP-21-837

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Kent	Sulem	ksulem@mmua.org	MMUA	3131 Fernbrook Ln N Ste 200 Plymouth, MN 55447-5337	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Lynnette	Sweet	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Analeisha	Vang	avang@mnpower.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Kodi	Verhalen	kverhalen@taftlaw.com	Taft Stettinius & Hollister LLP	80 S 8th St Ste 2200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Michael	Volker	mvolker@eastriver.coop	East River Electric Power Coop	211 S. Harth Ave Madison, SD 57042	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Sharon N.	Walsh	swalsh@shakopeeutilities.com	Shakopee Public Utilities	255 Sarazin St Shakopee, MN 55379	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Ethan	Warner	ethan.warner@centerpointenergy.com	CenterPoint Energy	505 Nicollet Mall Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_21-837_CIP-21-837
Robyn	Woeste	robynwoeste@alliantenergy.com	Interstate Power and Light Company	200 First St SE Cedar Rapids, IA 52401	Electronic Service	No	OFF_SL_21-837_CIP-21-837

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
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Rebekah	Billings	rebekah.billings@centerpointenergy.com	CenterPoint Energy Minnesota Gas	505 Nicollet Mall Minneapolis, MN 55402	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
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Charlie	Buck	charlie.buck@oracle.com	Oracle	760 Market St FL 4 San Francisco, CA 94102	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
Ray	Choquette	rchoquette@agp.com	Ag Processing Inc.	12700 West Dodge Road PO Box 2047 Omaha, NE 68103-2047	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1400 St. Paul, MN 55101	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
George	Crocker	gwillc@nawo.org	North American Water Office	PO Box 174 Lake Elmo, MN 55042	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
Patrick	Deal	pdeal@mnchamber.com	Minnesota Chamber of Commerce	400 Robert St N Ste 1500 Saint Paul, MN 55101	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST

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Charles	Drayton	charles.drayton@enbridge.com	Enbridge Energy Company, Inc.	7701 France Ave S Ste 600 Edina, MN 55435	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
Jim	Erchul	jerchul@dbnhs.org	Daytons Bluff Neighborhood Housing Sv.	823 E 7th St St. Paul, MN 55106	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
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Jenny	Glumack	jenny@mrea.org	Minnesota Rural Electric Association	11640 73rd Ave N Maple Grove, MN 55369	Electronic Service	No	SPL_SL__CIP SPECIAL SERVICE LIST
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First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Pat	Green	N/A	N Energy Dev	City Hall 401 E 21st St Hibbing, MN 55746	Paper Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
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Jeffrey	Haase	jhaase@grenergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 55369	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
Tony	Hainault	anthony.hainault@co.henn epin.mn.us	Hennepin County DES	701 4th Ave S Ste 700 Minneapolis, MN 55415-1842	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
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Patty	Hanson	phanson@rpu.org	Rochester Public Utilities	4000 E River Rd NE Rochester, MN 55906	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
Norm	Harold	N/A	NKS Consulting	5591 E 180th St Prior Lake, MN 55372	Paper Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
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Dave	Reinke	dreinke@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024-9583	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
Christopher	Schoenherr	cp.schoenherr@smmpa.org	SMMPA	500 First Ave SW Rochester, MN 55902-3303	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
Will	Seuffert	Will.Seuffert@state.mn.us	Public Utilities Commission	121 7th Pl E Ste 350 Saint Paul, MN 55101	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST

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Lynnette	Sweet	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
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Ethan	Warner	ethan.warner@centerpointenergy.com	CenterPoint Energy	505 Nicollet Mall Minneapolis, Minnesota 55402	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST
Robyn	Woeste	robynwoeste@alliantenergy.com	Interstate Power and Light Company	200 First St SE Cedar Rapids, IA 52401	Electronic Service	No	SPL_SL_CIP SPECIAL SERVICE LIST