

MEMORANDUM

To: Massachusetts Program Administrators

From: Carrie Koenig, Pam Rathbun, Rich Hasselman, Theresa Holmes, Tetra Tech

Cc: Mimi Goldberg, Shawn Bodmann, DNV GL

Date: February 15, 2019

Re: TXC49 (C&I NTG) MOU Research Results

This memorandum details the results of the TXC49 net-to-gross (NTG) analysis of commercial and industrial customers who have executed a Memorandum of Understanding (MOU) with Eversource. The goals of this effort were to explore how MOUs impact program participation, compare MOU NTG survey responses to non-MOU survey responses, and determine whether changes should be considered for the NTG methodology to account for the effect. This research was not meant to be a comprehensive look at MOU customers but rather to get a pulse on any potential changes. The research included only Eversource account managers, customers, and data.

1.1 OVERVIEW

The activities performed as part of this evaluation effort included:

- Literature review
- Qualitative in-depth interviews with two Eversource account managers who have clients with existing MOUs
- Qualitative in-depth interviews with two customers who have an existing MOU in place
- Analysis of self-reported data and NTG ratios for Eversource's MOU and non-MOU customers from the TXC49 C&I NTG survey conducted with 2017 program participants in late 2017 and early 2018.¹

1.2 EXECUTIVE SUMMARY

The purpose of an MOU is to create a partnership between the utility and the customer to encourage, support, and financially incentivize energy saving improvements at an enhanced

¹ Massachusetts Sponsors' Commercial and industrial Programs Free-ridership and Spillover Study, July 27, 2018. http://ma-eeac.org/wordpress/wp-content/uploads/TXC_49_CI-FR-SO-Report_14Aug2018.pdf

incentive rate. It also serves as a structured implementation plan for these improvements. MOUs establish energy savings goals for participating organizations, along with providing support and engagement to assist the organization with implementing energy efficiency projects. The MOU savings and planned projects are selected to go above and beyond what the organization would have done had an MOU not been in place. MOU's are typically a three-year commitment to allow time for planning and execution to meet energy-saving goals. MOU organizations and their respective account executives typically meet on a regular basis (bi-weekly or bi-monthly) to review existing projects and to go over future projects. Organizational structure may determine who is included in those meetings. Of those we interviewed, one organization had a team of three to four people who attended these meetings while the other had a MOU project manager who brings others in as needed.

1.2.1 Key Findings and Recommendations

Results from this study indicate that MOUs do influence customer adoption of stretch savings goals via program participation, although the extent of this influence is unclear given the limited scope of this effort. In the interviews, MOU customers stated they would not have been able to complete the projects they did without the assistance they received from the program through the MOU. Analysis of the TXC49 NTG survey results also show lower free-ridership rates among MOU respondents. (For Eversource electric, the difference was just over 4%, 15.1% compared to 19.0%.) As the TXC49 NTG survey did not specifically ask about the influence of MOUs, it is unclear if the respondents were considering the MOU during survey responses or just their general interactions with the programs. While the survey did not explicitly include MOU language in any of the question text, the survey does ask about prior program participation, if the organization has an account representative, and the impact of the technical assessment. All of these are included as part of the MOU, so respondents may have been considering this assistance in their survey responses.

To ensure the NTG research is able to account for the impact of a MOU in future research, the evaluation team offers the following recommendations.

Flag MOU customers in participation data. To be able to run comparative analysis between customers with and without MOUs, the evaluation team will need to have customers flagged in the population file. While this flag would not be used for sampling purposes, it would allow us to easily conduct analysis on the back end to understand how MOU customers differ from non-MOU customers. This study focused on Eversource MOU participants who responded to the TXC49 survey; although going forward future evaluation efforts would be expanded to other program sponsors offering MOUs.

Include the main MOU contact name and contact details with the participation data. To be able to complete any data collection with the person most familiar with the MOU, the evaluation team will need to have the contact information of the customer in the population file. Having this contact information would help direct our questions to the appropriate respondent.

For MOU customers, modify survey questions to reference the MOU when asking about the program assistance they may have received. The survey currently reminds customers that the program assistance they received may have included rebates, dual-fuel projects, technical

assessments (study), and financing or repayment assistance. For MOU customers, we could modify or add text to survey questions to reference the information and assistance they received as part of the MOU. This would remind customers with MOUs to consider that assistance while responding to the survey questions.

For MOU customers, add survey questions regarding the respondent's personal involvement with the MOU. The current NTG survey does not include any mention of the MOU for those customers in a MOU partnership. As a result, in some cases, the survey respondent may not be aware of the MOU or have been directly involved in the MOU process. The evaluation team recommends adding a question asking the specific respondent about their personal involvement in the MOU to ensure that we are talking with the person directly involved with the MOU. The team would use the question as a consistency check when assessing the impacts of prior program participation

For MOU customers, add a survey question regarding the influence of the MOU in their decision to implement the project. The MOU may be a factor in some customers completing energy efficient projects while other organizational goals could also have an impact. The evaluation team recommends adding a question asking about the influence the MOU had on implementing each energy efficiency project. The question would be asked on a 0 to 10 scale, similar to the question on the impact the technical assessment had on a project. This question would be used as a consistency check to better understand the impact the MOU had on the project. If the survey question text is updated to include MOUs, no adjustment would be made to free-ridership rates as it would result in double counting.

Prior to making any changes to the algorithm, the evaluation team recommends implementing the survey changes and using the survey responses for consistency checks. Given the small number of MOU customers interviewed for this study, future evaluation efforts should analyze the results again to determine whether an update to the algorithm should be used to account for inconsistent results.

1.3 DETAILED RESULTS

This section presents the detailed results of the evaluation activities. These activities included the literature review of other studies that examined the influence of MOU-type agreements on program attribution, in-depth interviews with two MOU customers, in-depth interviews with two account managers, and a review of the 2017 NTG study results², calculations, and scoring adjustments.

1.3.1 Literature Review

The evaluation team reached out to several industry experts (Katherine Johnson, Scott Dimetrosky, Mimi Goldberg) to gather feedback on the potential effects of MOUs on NTG results and how other programs have addressed their influence on program participation. These experts were not aware of research being done on MOU customers, or specifically any NTG algorithm adjustments or analysis. Given strategic energy management (SEM) programs are similar in

² Massachusetts Sponsors' Commercial and industrial Programs Free-ridership and Spillover Study, July 27, 2018.

nature to MOU customers in that there is more collaboration between parties, the evaluation team also reviewed related materials on SEM programs. The evaluation team also conducted an internet search for program reports related to SEM programs including the Uniform Methods Project (UMP)³ SEM evaluation protocol. As indicated in the UMP, these programs are a relatively new offering, so evaluators are “still developing best practices for evaluation” and the UMP protocol will be updated “as evaluation approaches improve and consensus builds around the best approaches.”

One concern expressed over the application of NTG credits for having an MOU is the risk of “double counting.”⁴ NTG algorithms include scoring adjustments for the impact of program aspects such as technical assessments and past participation; however, MOUs typically include technical assessment studies and are likely to be multi-year so unless a customer is in their first year of an MOU they would have had prior participation. There are no documented approaches to address these concerns, though in the Massachusetts survey, prior participation is identified by the respondent, not as a database flag, thereby creating a potential misapplication of prior participation credit should the respondent not be aware of an MOU or any other prior participation. The Massachusetts survey goes on to ask respondents about the influence of their prior participation on their purchasing decisions.

While little to no research has been conducted in this area, in California, their Nonresidential Net-to-Gross Ratio Working Group has outlined a framework for estimating NTG for the California Public Utilities Commission.⁵ The framework suggests that for very large customers, a case study level effort would be appropriate to collect information from various sources to supplement decision-maker interviews. The framework also notes concerns with the analysis of multiple respondents and data sources on free-ridership. As such, before analysis begins, CA evaluators are advised they must establish rules for the integration of the data sources in NTG calculations. Additionally, during analysis, more than one evaluator is recommended to analyze the data to increase reliability of the results.

1.3.2 In-Depth Interviews: Account Managers

The evaluation team spoke with two account managers/executives at Eversource regarding their involvement in implementing MOUs. These account managers provided an overview of their role in the MOU process and discussed what makes customers good candidates for successful MOUs. One account manager we spoke with is responsible for two MOU customers, while the other has had up to four MOU customers.

Account managers stated that MOU customers tend to be quartile one customers, those who have the highest energy usage. These high usage customers make good candidates for MOUs because they have enough energy consumption to create long-term stretch goals that bring value to MOU development. While the MOUs have non-binding savings goals and focus on building the

³ Chapter 24: Strategic Energy Management (SEM) Evaluation Protocol.
<https://www.nrel.gov/docs/fy17osti/68316.pdf>

⁴ Utility Strategic Energy Management Programs, March 2013.

http://swenergy.org/data/sites/1/media/documents/publications/documents/Utility_SEM_programs_03-2013.pdf

⁵ Methodological Framework for Using the Self-Report Approach to Estimating Net-to-Gross ratios for nonresidential Customers; Oct 16, 2012.

partnership and trust between the two entities, Eversource assumes this relationship-building leads to long term energy efficiency project development.

Successful MOUs were observed when an organization was able to bring staff at high enough levels to the table to understand the partnership agreement and broad intent of an MOU. Additionally, customers who have centralized decision-making processes were observed as being more able to promote and support MOU-related decisions. This buy-in by central decision-makers helps create the roadmap to MOU success. Additionally, good candidates for MOUs are those organizations with adequate capital to invest in energy efficiency projects and who have staff with adequate bandwidth to participate in the MOU partnership. The account managers have observed that absent these two criteria (capital and staff bandwidth), MOUs are less likely to be successfully executed or operated.

When asked about the type of projects completed by having an MOU in place, one account manager talked about how they were able to pilot initiative programs with the MOU customers before taking them to market. This allowed the MOU customers to capitalize on new product offerings and opportunities (e.g., facility manager training and accelerated performance for new construction pilots), and it allows Eversource to pilot or ‘test drive’ offerings prior to rolling them out to the larger customer base. There was also discussion about how customers would still be doing energy efficient projects but would not do as much without a MOU. Account managers indicate the MOU pushes customers toward stretch goals that may not exist if the MOU was not in place.

1.3.3 In-Depth Interviews: Customers with MOUs

The evaluation team spoke with two customers who have had a MOU with Eversource. Both of these customers have had MOUs with Eversource for over five years. These customers provided an overview of their company’s MOU and their understanding of why it was originally put in place, along with the benefits it offers. The customers talked about how, as time went on, the Eversource account managers developed a better understanding of what types of projects the organization could and could not do and how long approval processes take. This helped them to develop realistic energy saving goals, timelines for projects, and decide which projects each would be willing to take on. In short, the MOU helped align program efforts and MOU savings targets with activities that the participants could achieve.

Both customers indicated they have a MOU in place because their organizations already have internal energy saving and/or greenhouse gas reduction goals. Each customer stated that the MOU allowed the organization to go above and beyond what they would have typically done. Because the MOU goals are above and beyond what they typically would have done, Eversource offers increased incentive levels (i.e., post-project reimbursement based on an agreed upon incentive rate based off kWh or therms saved) and assistance to help MOU customers achieve their goals, assuming projects meet specific payback and benefit cost ratios. Customers, however, may need to consider organizational-wide goals such as greenhouse gas reduction and sustainability that may result in competing goals, which sometimes makes meeting the savings goals included in the MOU challenging. While greenhouse gas emissions and energy conservation go hand in hand, if a customer decides the greenhouse gas emissions are a higher

priority, MOU energy conservation projects may need to be delayed, particularly when, as one customer indicated kWh does not save as much greenhouse gas as therms do.

In addition to the incentives provided, one customer talked specifically about the local engineering support they received through the program. This customer categorized the engineering support they received as being “critical.” The support they received from Eversource also provided broader market perspectives on energy efficiency projects that other industries have implemented and how it may benefit their facility.

While both MOU participants said they would have completed some energy efficient projects without the MOU in place, both said the MOU influenced the extent of the improvements and the timing of implementation. One customer indicated the MOU gives organizations the reason to do the project and gives the project justification. Without the MOU, it is easy to push the project off into the future with the hope that it would eventually be completed. The other customer indicated that while they would have completed energy efficiency projects, they would have done “a lot fewer.”

Each organization talked about how the relationship created by the MOU has grown into partnerships between the two parties. As one customer indicated, “it’s not a contract; it’s a joint agreement to try to collaborate and achieve a goal.” Each party needs to trust the other as they work together to achieve a common goal for the organization.

1.3.4 Analysis of Self-Report Survey and Free-ridership Ratios

On November 10, 2017, Eversource supplied Tetra Tech with a file containing a list of 79 customers who have an existing MOU. To identify MOUs, Tetra Tech matched the list against the list of TXC49 survey respondents by customer name, with a total of 42 measure-level records representing 14 unique MOU customers across both gas and electric fuel types that responded to the TXC49 survey⁶. (Note, some customers are dual fuel and are accounted for in both the electric and gas customer counts.) Results were weighted and analyzed at the measure level to be consistent with overall statewide reporting procedures as developed for the TXC49 study. The table below shows the free-ridership rates of Eversource’s MOU customers compared to non-MOU customers. Note that the difference is not statistically significant either for electric or gas.

We should also note that the non-MOU customers are all the remaining Eversource customers. While account managers indicated that quartile one customers are ideal candidates for an MOU, this research was not limited to just those customers. Furthermore, this research includes all initiatives (i.e., end of useful life, new construction and retrofit) and program types (custom and prescriptive).

⁶ Both Eversource and Cape Light Compact provided a list of MOU customers post data collection, however, only Eversource had surveys completed by a MOU identified customer.

Table 1. Free-ridership Rates for Eversource’s MOU and Non-MOU Customers at the Measure Level

Eversource	Electric				Gas			
	FR	kwh	Measure Count	Customer Count	FR	therms	Measure Count	Customer Count
Non-MOU	19.0%	85,359,107	516	261	20.6%	1,368,263	101	71
MOU	15.1%	7,083,429	32	14	9.6%	208,387	10	3
Total	18.5%	92,442,537	548	275	18.8%	1,576,650	111	74

To analyze the effects of having a MOU on program participation using the self-reported data, Tetra Tech conducted comparisons between Eversource’s MOU and non-MOU customers looking at the impacts of the following on NTG ratios:

- Having a dedicated account representative
- The existence of formal company requirements or informal guidelines for the purchase, replacement, or maintenance of energy-using equipment.

The scoring algorithm does not take these factors into account, but rather is used for consistency checks and understanding respondent responses. The existing self-report survey does not incorporate any language about MOUs. As a result, some respondents may have included the support they receive through their MOU in the feedback/results while other MOU respondents may not have done so.

This analysis looks only at customers where data was available. If a respondent responded that they did not know if they have an account representative or guidelines for purchasing new equipment, they have been excluded from the following analysis. As a result, the customer and measures counts and percentages may be different between the tables.

1.3.4.1 Having a dedicated account representative

Typically, account managers are assigned to customers with higher consumption, who may, in general have lower free-ridership. In the survey, customers were asked if they had a dedicated account representative⁷. Both MOU and non-MOU customers who reported having a dedicated account representative reported lower levels of free-ridership. Additionally, two of the 17 respondents indicated their organization did not have a designated account manager despite them having an MOU in place. This suggests that the specific survey respondent may not have been as involved as they indicated, may have misunderstood survey terminology (“managed account”, “account executive”), or thought of the MOU separately from an account manager.

⁷ Question BG6 from the NTG survey: Does your organization have a dedicated account representative from <Sponsor>?

Table 2. Free-ridership Rates for Eversource’s MOU and Non-MOU Customers by Having a Designated Account Manager

Eversource	Account Managed	Electric				Gas			
		FR	kwh	Measure Count	Customer Count	FR	therms	Measure Count	Customer Count
Non-MOU	Managed	12.8%	71,081,424	230	111	18.6%	655,942	43	25
	Not managed	32.7%	9,757,636	166	112	46.9%	141,682	30	28
	Total	16.7%	80,839,060	396	223	24.4%	797,624	73	53
MOU	Managed	13.0%	6,923,102	29	13	4.5%	133,855	7	2
	Not managed	44.8%	3,186	2	1	25.0%	74,532	3	1
	Total	13.1%	6,926,288	31	14	9.6%	208,387	10	3

1.3.4.2 The existence of formal company requirements or informal guidelines for the purchase, replacement, or maintenance of energy-using equipment

Survey respondents were also asked whether their organization has any formal requirements or informal guidelines for the purchase, replacement, or maintenance of energy using equipment⁸. This question is used for consistency checks and is not incorporated into the NTG algorithm. Both MOU and non-MOU customers who reported having no guidelines show higher levels of free-ridership. Some reasons for this may be how the question was worded and therefore interpreted by the respondent, programs may be pushing people beyond what they would have done anyway, or the MOU may be pushing organizational changes. Among electric customers having some type of guidelines, free-ridership does not vary much between MOUs and non-MOUs.

Table 3. Free-ridership Rates for Eversource’s MOU and Non-MOU Customers Having Company Guidelines for the Purchase, Replacement, or Maintenance of Energy-Using Equipment

Eversource	Company Guidelines	Electric				Gas			
		FR	kwh	Measure Count	Customer Count	FR	therms	Measure Count	Customer Count
Non-MOU	Has guidelines	12.8%	60,295,117	205	97	14.7%	614,974	36	23
	No guidelines	25.4%	24,038,787	259	164	48.5%	206,292	55	43
	Total	18.2%	84,333,905	464	261	24.3%	821,266	91	66
MOU	Has guidelines	13.1%	4,530,619	25	9	4.2%	133,575	6	2
	No guidelines	22.1%	2,552,810	7	5	25.5%	74,812	4	2
	Total	15.1%	7,083,429	32	14	9.6%	208,387	10	4

1.3.5 Net-to-gross Calculations and Adjustments

This section discusses the NTG scoring adjustments to both MOU and non-MOU customers. MOU customers, by design, have different program experiences than non-MOU customers;

⁸ Question BG3 from the NTG survey: Does your company have any formal requirements or informal guidelines for the purchase, replacement, or maintenance of energy-using equipment?

therefore, they may warrant alternative scoring adjustments. Recommendations for alternative scoring adjustments are included in this section.

NTG is calculated using the following equation:

$$\text{NTG Ratio} = 100\% - \text{free ridership} + \text{participant spillover} + \text{nonparticipant spillover}$$

Free-ridership is initially determined by three factors; timing, efficiency, and quantity. In the absence of the program, would the customer have implemented the project at the same time, with the same energy efficiency level, and measure quantity to assess the program’s influence?⁹ Additional scoring adjustments to NTG are made based on consistency checks of the respondent’s data and the influence of three primary program factors; the technical assessment they received, being dual-fuel (gas and electric customer), and the influence of past participation¹⁰ in any other Massachusetts service provider or MASS Save energy efficiency programs. This is followed by an adjustment based on the feedback from the influential vendor (vendor influence).

Table 4 below shows the progression of free-ridership results after each scoring adjustment. With the inclusion of all adjustments, free-ridership scores were nearly cut in half from the initial timing, efficiency, and quantity adjustments largely driven by the past participation adjustment. The effects of each adjustment are similar between MOU customers and non-MOU customers.

Table 4. Eversource Free-ridership Results After Each Score Adjustment

Adjustments	Electric			Gas		
	Eversource Non-MOU	Eversource MOU	Eversource Overall	Eversource Non-MOU	Eversource MOU	Eversource Overall
Initial scoring (timing*efficiency*quantity)	47.2%	43.7%	46.7%	50.0%	35.0%	47.6%
Technical assistance	41.4%	30.4%	40.0%	48.1%	33.4%	45.8%
Dual fuel	36.1%	21.9%	34.3%	46.5%	33.4%	44.5%
Previous participation with influence	22.2%	14.4%	21.2%	19.3%	9.6%	17.8%
Vendor influence	19.0%	15.1%	18.5%	20.6%	9.6%	18.8%
Reported Results	19.0%	15.1%	18.5%	20.6%	9.6%	18.8%

Table 5 below shows the counts and percentage of records (i.e., measures) with scoring adjustments. The adjustments are not mutually exclusive as records could receive more than one

⁹ Not all respondents get asked each of the timing, quantity and efficiency components. For example, new construction records are not asked the timing component, while customers who install insulation are not asked about efficiency, and customers who only install one item are skipped out of the quantity component.

¹⁰ Adjustments for past participation are only applied where respondents indicated they had past participation and that the past participation was influential in their decision-making. “Influence” is determined by Question PP3 in the NTG survey which asks the respondent to agree or disagree to four statements: ‘Has made our firm more likely to consider energy efficient equipment’; ‘Has made our firm more likely to install energy efficient equipment’; ‘Has given us more confidence in the financial benefits of energy efficient equipment’; and ‘Has given us more confidence in the nonfinancial benefits of energy efficient equipment.’ If the respondent agrees to three or more of the statements, an adjustment to free-ridership is made.

adjustment. Forty percent of non-MOU customers received an adjustment for past participation while 45% of MOU customer received the same adjustment.

Table 5. Frequency and Percentage of Eversource Records with Score Adjustments at the Measure-level

Adjustments	Eversource Non-MOU		Eversource MOU	
	Number Adjusted	Percent of Records Adjusted	Number Adjusted	Percent of Records Adjusted
Previous participation with influence	243	40%	25	45%
Vendor influence	229	38%	14	25%
Technical assistance	138	23%	8	14%
Dual fuel	102	17%	7	13%

Note: Adjustments are not mutually exclusive. More than one adjustment can be made to a record.

1.3.5.1 Previous participation in any energy efficiency program offered by Eversource

Survey respondents were also asked whether they had previously participated in an energy efficiency program offered by Eversource¹¹. Over 80% of MOU electric and gas customers reported having previous program participation (80.6% and 88.9%, respectively). As the TXC49 survey questions did not specifically address MOUs, the survey does not address whether they may have been a new MOU customer, with participation occurring before the MOU. Additionally, the accuracy of prior participation responses has not been investigated. This analysis looks at the self-reported previous program participation rather than any database analysis of past program participation. With 20% of electric and over 10% of gas MOU respondents indicating no prior participation, it may be that the specific respondent was unaware of prior participation when prior participation had actually occurred.

Table 6. Eversource’s MOU and Non-MOU Customers Reporting Previous Program Participation

Eversource	Electric			Gas		
	Non-MOU	MOU	Overall	Non-MOU	MOU	Overall
Had previous participation	52.6%	80.6%	54.2%	53.6%	88.9%	56.6%
No previous participation	47.4%	19.4%	45.8%	46.4%	11.1%	43.4%
Measure count	502	31	533	97	9	106

¹¹ Question PP1 from the NTG survey: Now I'd like you to think back to the project you implemented with <Sponsor? In 2016. Had your business participated in an energy-efficiency program offered by any Massachusetts service provider or MASS Save before you implemented this project/these projects?

Response to the previous program participation questions are used in the NTG algorithm. Respondents who indicate they previously participated in an energy-efficiency program offered by any Massachusetts service provider were asked to state whether they agreed or disagreed with four statements¹² about the effect past participation had on their decision-making. Based on the number of statements with which they agreed, the algorithm reduced their free-ridership by 75%, 37.5%, or not at all. The purpose of this reduction was to account for the influence positive program experiences (with the program administrators, implementers, or the equipment incented) had on participants' purchasing decisions.¹³

Table 7. Free-ridership Rates for Eversource's MOU and Non-MOU Customers by Having Previous Program Participation

Eversource	Previous Program Participation	Electric				Gas			
		FR	kwh	Measure Count	Customer Count	FR	therms	Measure Count	Customer Count
Non-MOU	No participation or previous participation with no influence	34.9%	19,979,527	273	159	43.2%	216,431	52	43
	Previous participation with influence	9.1%	65,379,581	243	110	13.6%	1,151,832	49	28
	Total	19.0%	85,359,108	516	269	20.6%	1,368,263	101	71
MOU	No participation or previous participation with no influence	31.0%	2,710,517	7	4	63.3%	1,980	2	1
	Previous participation with influence	10.3%	4,372,912	25	10	8.4%	206407	8	3
	Total	15.1%	7,083,429	32	14	9.6%	208,387	10	4

1.3.5.2 How program participation for MOUs differs from Non-MOUs

MOU customers differ from non-MOUs in multiple ways. First, they have different incentive structures. Non-MOUs receive rebates at the measure level and MOUs receive post-project reimbursement based on an agreed upon incentive rate based off kWh or therms saved. Second, MOUs, by design, have a dedicated account executive along with access to ongoing engineering support to help identify potential energy-saving projects. Non-MOUs may or may not have a dedicated account manager or have had a technical assessment. And third, MOUs are a signed non-binding agreement between Eversource and the customer, setting long-term plans for

¹² These four statements included: Has made our firm more likely to consider energy efficient equipment; Has made our firm more likely to install energy efficient equipment; Has given us more confidence in the financial benefits of energy efficient equipment; Has given us more confidence in the nonfinancial benefits of energy efficient equipment.

¹³ Only customers who were aware of their past participation would be able to respond affirmative to the question. If a respondent was new to the organization, they may not have been aware of previous participation, thus limiting the true program influence.

achieving energy savings through the program through multiple projects over the course of a predetermined timeline.

Section 2 Conclusions

MOUs set out energy savings goals for participating organizations, with customer support and program staff engagement structured to assist the participating organization with implementing selected energy efficiency projects. The MOU savings and planned projects are selected to go above and beyond what the organization would have done had an MOU not been in place. In the interviews, MOU customers stated they would not have been able to complete the projects they did without the assistance they received from the program through the MOU. Analysis of the TXC49 NTG survey results also show lower free-ridership rates among MOU respondents although the results were not statistically significant. This may be because the C&I algorithm in the TXC49 NTG study provides attribution credit for prior participation as well as responses that indicate other program support influenced their projects. As the TXC49 NTG survey did not specifically ask about the influence of MOUs, it is unclear if the respondents were considering the MOU during survey responses or just their general interactions with the programs.

There are unknowns with the TXC49 results, in that it is not clear if respondents were including their MOU experience in their survey responses. Additionally, it is not clear if TXC49's survey and scoring algorithm captures the MOU impact. Because there are no industry-wide approved approaches for determining NTG for MOU customers, there are several options that could be considered. Here are some approaches for consideration:

1. Do nothing. Keep the scoring as-is applying no credit for having an MOU.
2. Modify the survey questions to include the MOU in the program assistance the organization receives and is reminded about. Effectively this keeps the NTG algorithm the same but incorporates consideration of the MOU into survey responses.
3. Add questions to the survey specific to MOUs as a consistency check. Potential questions include the respondent's involvement in the MOU and the influence the MOU had on the project. If a score adjustment is added in the future, we need to minimize any risk of double counting savings credits. The current NTG algorithm provides credit to the program if customers report the technical assessment and/or past participation as being influential to their participation in the program. Since those credits are part of an MOU by design, applying an additional credit for having an MOU would amount to double counting.

Regardless of the approach, because we would still want to be able to conduct analysis on MOU and non-MOU customers we would need to flag MOU customers prior to survey implementation. Additionally, the evaluation team recommends including the MOU contact name and phone number with the sample details. At this time, the research team is not recommending changes to the algorithm but rather focusing on options 2 and 3 above, by updating the questionnaire to explicitly include text about the MOU for MOU customers and including a question about the respondent's involvement with the MOU.

To ensure the NTG research accounts for the impact of a MOU, the evaluation team offers the following recommendations.

Flag MOU customers in participation data. To be able to run comparative analysis between customers with and without MOUs, the evaluation team will need to have customers flagged in the population file. While this flag would not be used for sampling purposes, it would allow us to easily conduct analysis on the back end to understand how MOU customers differ from non-MOU customers. This study focused on Eversource MOU participants who responded to the TXC49 survey; although going forward future evaluation efforts would be expanded to other program sponsors.

Include the main MOU contact name and contact details with the participation data. To be able to complete any data collection with the person most familiar with the MOU, the evaluation team will need to have the contact information of the customer in the population file. Having this contact information would help direct our questions to the appropriate respondent.

For MOU customers, modify survey questions to reference the MOU when asking about the program assistance they may have received. The survey currently reminds customers about the program assistance they may have received that included rebates, dual-fuel projects, technical assessments (study), and financing or repayment assistance. For MOU customers, we could modify or add text to survey questions to reference the information and assistance they received as part of the MOU. This would remind customers with MOUs to consider that assistance while responding to the survey questions.

For MOU customers, add survey questions regarding their involvement with the MOU. The current NTG survey does not include any mention of the MOU for those customers in a MOU partnership. The evaluation team recommends adding a question asking the specific respondent about their personal involvement in the MOU. The team would use the question as a consistency check when assessing the impacts of prior program participation. In some cases, the survey respondent may not be aware of the MOU or have been directly involved in the MOU process.

For MOU customers, add a survey question regarding the influence of the MOU in their decision to implement the project. The MOU may be a factor in some customers completing energy efficient projects while other organizational goals could also have an impact. The evaluation team recommends adding a question asking about the influence the MOU had on implementing each energy efficiency project. The question would be asked on a 0 to 10 scale, similar to the question on the impact the technical assessment had on a project. This question would be used as a consistency check to better understand the impact the MOU had on the project. If the survey question text is updated to include MOUs, no adjustment would be made to FR rates as it would result in double counting.

At this time, the evaluation team recommends making no changes to the algorithm as the algorithm is capturing the effects of the MOU. The evaluation team recommends implementing the survey changes and to use the responses for consistency checks. Given the small number of MOU customers interviewed for this study, future evaluation efforts should analyze the results again to determine whether an update to the algorithm should be used to account for inconsistent results.