

2019-21 EEB THREE YEAR EVALUATION BUDGET & PLAN

RECOMMENDATION



December 7, 2018
Adopted / Final

Prepared for:
CTEEB Evaluation Committee and EEB

Prepared by:
Evaluation Administrators:
Lisa A. Skumatz
Ralph Prah
Jennifer Chiodo
David Jacobson
Robert Wirtshafter

Organization of the Report

Contents

Abstract..... 1

Introduction 2

Summary of Process..... 3

Summary of Recommendations – Overall Budget..... 6

 Budget Summary and Caveats: 6

 Budget for the Three-Year Evaluation Budget and Plan: 7

Recommended Projects for the Three-Year Evaluation Plan - Projects 7

 Notes on Specific Projects / Projects Bearing Special Attention: 8

 Project Tables:..... 9

Next Steps 16

CT EEB 2019-21 THREE YEAR EVALUATION BUDGET AND PLAN – ABSTRACT

Abstract

As a result of an exhaustive project needs assessment, concept solicitation, ranking, and collaborative discussion process, the Evaluation Administrator Team (EA Team) is pleased to submit this recommended budget and supporting Evaluation Projects for the 2019-21 Cycle. The requested evaluation budget is consistent with the total approved in the C&LM plan, and the projects were discussed with stakeholders in an open and collaborative manner, with multiple opportunities for input and feedback. The total budget requested for the Three-Year plan is \$7.93 million, with annual phased dollars show in Figure A.1 (rounded to \$1.93 million in 2019 and \$3 million in each of 2020 and 2021. The 21 recommended projects, budget totals, and budget phasing are presented in Figure A.2.

Figure A.1: Recommended Evaluation Plan Budget and Project Counts by Sector and Year

Round totals to \$1.93 million, \$3 million, and \$3 million in 2019, 2020, and 2021, respectively

	Cross Sector	Commercial	Residential	Total
2019	\$809	\$240	\$886	\$1,934
2020	\$721	\$745	\$1,528	\$2,995
2021	\$670	\$1,446	\$886	\$3,001
Total	\$2,200	\$2,430	\$3,300	\$7,930
Number of Recommended Projects	6.0	5.0	10.0	21.0
Percent by Sector	28%	31%	42%	100%

Figure A.2: Recommended Project List –Projects, Budgets, and Score

(X-Cross-sector; C=Commercial; R=Residential)

Round totals to \$1.93 million, \$3 million, and \$3 million in 2019, 2020, and 2021, respectively

Project	Project Name	Budget	2019	2020	2021
1	X1931 In-Depth PSD Review (All sectors)	\$625	75%	25%	0%
2	X1941 MF Impact evaluation (merges in R1971)	\$400	50%	50%	0%
3	X1932 DR EM&V Support (All sectors)	\$375	5%	20%	75%
4	X1939 Early retirement initiatives evaluation (All sectors)	\$275	35%	40%	25%
5	X1940 2020-2021 Study of Emerging Issues	\$400	0%	20%	80%
6	X1942 Cross-Cutting NEI studies (merges in R1942)	\$125	20%	80%	0%
7	C1902 ECB NTG and Baseline	\$600	0%	35%	65%
8	C1920 EO Impact Evaluation - Phase 1	\$565	0%	0%	100%
9	C1918 SBEA Impact Evaluation	\$375	0%	0%	100%
10	C1901 C&I Sector-wide Process Evaluation (non-SBEA)	\$615	30%	70%	0%
11	C1906 SEM Evaluation	\$275	20%	38%	42%
12	R1982 Residential HVAC/DHW Performance and Potential	\$765	60%	20%	20%
13	R1968 RNC Baseline and Potential Study	\$315	0%	15%	85%
14	R1965 HP / HPWH Baseline and Potential Assessment	\$265	60%	40%	0%
15	R1983 HES & IE Process and NTG Evaluation	\$425	0%	100%	0%
16	R1963 Short Term Residential Lighting Analysis	\$150	85%	15%	0%
17	R1984 HES & IE Impact Evaluation	\$300	0%	10%	90%
18	R1960 SF Weatherization Assessment / Update	\$650	0%	70%	30%
19	R1973 Retail Non-Lighting Products Impact and Process	\$225	50%	50%	0%
20	R1959 SF Renovation and Additions Potential Analysis	\$140	20%	80%	0%
21	R1969 Impact Evaluation / retention of behavioral program	\$65	0%	100%	0%
	Total Cross-Cutting	\$2,200	\$809	\$721	\$670
	Total Commercial	\$2,430	\$240	\$745	\$1,446
	Total Residential	\$3,300	\$886	\$1,528	\$886
	Grand Total	\$7,930	\$1,934	\$2,995	\$3,001

CT EEB 2019-21 THREE YEAR EVALUATION BUDGET AND PLAN

Introduction

This document provides the summary of the process and the results for the EA Team's preparation of the CTEEB's Three-Year Evaluation Budget and Plan for 2019-2021. This document includes background information on the budget and projects for the Evaluation Committee. This document includes:

- Summary of the multi-step process used to develop projects and budgets
- Summary grand and sector-level total budget and project counts for cross-sector, commercial, and residential sectors,
- Listing of all projects – those recommended and not recommended, as well as the concepts that were submitted and discussed, but ultimately merged into (recommended or not-recommended) projects for efficiency, overlap, or other reasons,¹
- Tables of budget ranges and total aggregate scores for each project,
- Tables of Summary / outcomes for each project, and the summary of the rationale for recommending or not recommending each project, and
- Tables detailing scores for each criterion for each project.

The in-person meeting on 11/30/18 and follow-up discussion on 12/7/18 (phone) included:

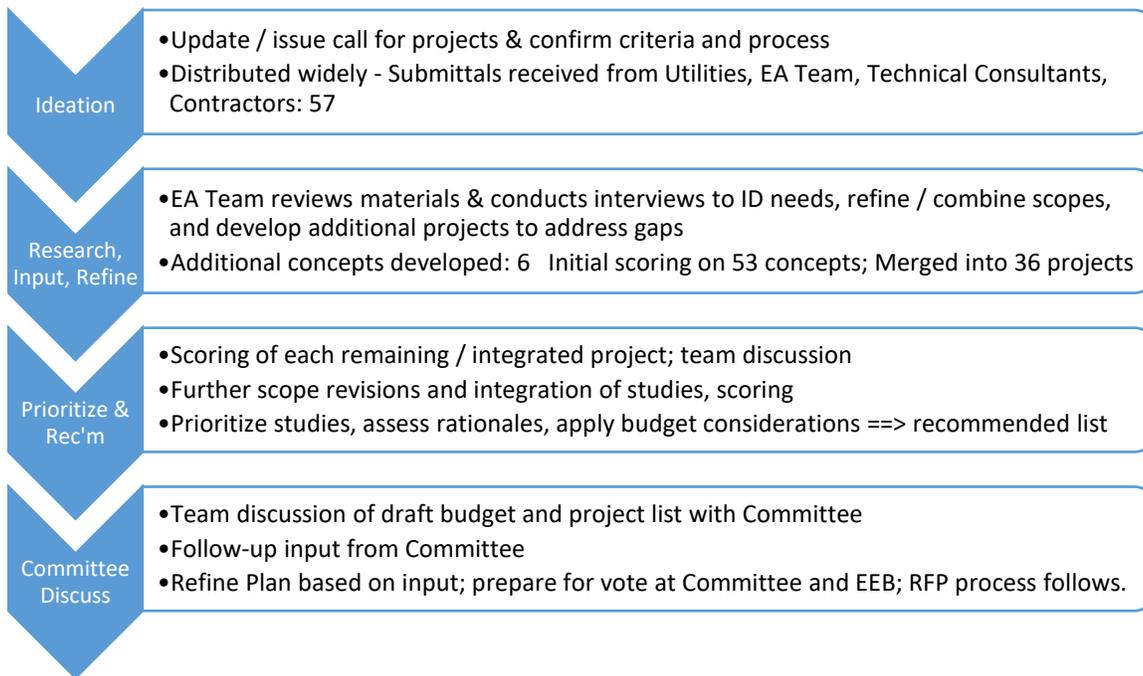
- Discussion of the process used to develop the projects,
- Walk-through of the recommended projects for each sector (commercial, cross-sector, and residential in turn), and brief description of those not recommended and mention of those merged. The walk-through will discuss the project and outcomes, strengths and rationale for recommendation, and budget range. The discussion solicits comments from attendees on scope / needs, priorities / rankings, budget, timing, and other questions, comments, and suggestions.
- Discussion of issues, budget, and next steps. Note that the plan included multiple options for the committee to discuss the recommended budget and projects. A phone discussion was scheduled for 12/7 and the committee meeting provides another opportunity, if needed. The EA team sent a document that updated the budgets, projects, and recommendations in advance of the 12/7 meeting, providing budget point estimates that reflect the priorities and outcomes feedback reflected in the November meeting. The follow-up meeting allowed additional questions and issues to be raised and discussed. The EA Team considered the comments and prepared this Recommended 2019-21 Three Year Evaluation Budget and Plan for consideration and vote by the Committee.

¹ This allows submitters to track what happened to any project concepts they submitted into the process.

Summary of Process

This “2019-2021 Three-year Recommended Evaluation Budget and Plan” document serves as the foundation of the plan for the EEB Evaluation Committee and others. These recommendations were prepared by the Evaluation Administrators (EA) in October, November, and December 2018, using multiple steps.

Figure 1: Evaluation Plan Development Process (abbreviated)



The detailed steps follow:

- EA solicited project ideas reflecting PSD, program, and evaluation needs through a widely-distributed request, soliciting concepts from the Committee, technical consultants, EA Team, and others. 57 concepts submitted (17 commercial, 9 cross-sector, and 31 residential).
- Concurrently, the EA Team reviewed the C&LM Plan and projected savings; discussed program changes and direction, as well as PSD considerations with the Technical Consultants; and reviewed the timing and content of previous Evaluation projects and used this information to identify needs, and develop project concepts.
- EA numbered each submittal, and reviewed the submittals for duplicates, efficiencies, and coordination opportunities. Ultimately through the various merging stages, 27 concepts were merged into other projects.
- EA team developed enhanced write-ups to reflect the submitted and merged projects, and based on discussion, developed additional projects to cover gaps we identified (adding 6 projects).
- The EA team jointly discussed the projects and developed budget ranges associated with each project on the list².

² And tracked those concepts that were merged into others

- EA team conducted an extensive scoring process, ranking each project on ten criteria previously discussed with the Committee. The EA Team discussed the projects and each project was scored from VL to VH (translating to 1-7; higher scores are better) on each of the **criteria**.³

CRITERIA USED TO EVALUATE PROJECTS

- Impact evaluation: these projects are rated highly
- Process evaluation: these projects are rated highly
- Project has not been evaluated recently, or is due for the next round receives a higher score. Goals for evaluation frequencies, especially for important programs, are approximately a 3-year cycle (but budgets have tended to make it difficult to evaluate commercial programs that often).
- High C&LM Plan savings (and / or budgets) associated with the relevant program leads to a higher score. Savings rankings within programs and in the overall portfolio are considered.
- Projects needed to meet needs of ISO / FCM score more highly. Requirements that studies be no more than 5 years old for ISO is a key factor. This criterion has tended to lead to a preference for C&I and lighting evaluations.
- Projects that address important gaps, uncertainties, or aged numbers in PSD score more highly. Scoring takes into account review of the PSD and input from the technical consultants.
- Projects that address important gaps / needs for program design score highly. This scoring is influenced by discussions with the technical consultants and others, and review of the C&LM Plan’s directions.
- Projects that follow another project, or are part of a series, receive a boost from this criterion; however, continuity is not a given.
- Projects that have the potential to be co-funded with other agencies receive a boost. Abilities to co-fund with the EM&V forum / NEEP have decreased, but we also consider opportunities to piggy-back with different states. In addition, we score projects more highly if they have not been done elsewhere (and could be “borrowed / adapted”) and are needed.
- Other important considerations are reflected in an additional ranking criterion.
- Of course, budgets are also important but are not scored in the same way; they are considered as part of a separate process.

- We reviewed the ranked projects, and found that a cutoff of the weighted score of 4⁴ corresponded very roughly to the available budget.⁵ Projects above this score were then identified as “tentatively recommended” projects.
- Based on discussion with in the EA Team, refined budget ranges were developed for the “tentatively recommended” projects (many of which were merged versions of multiple submitted concepts). A final list of projects – recommended and not – was developed (36 projects).
- These projects and budgets were reviewed again by EA Team discussion. The total dollars represented, the share for each sector, the timing or phasing, and whether projects need to be completed in this 3-year

³ The criteria were weighted to reflect importance from discussion with the committee. Rankings, grouped by weights, were: highest weights for Impact evaluation, C&LM savings, Length of time since last evaluated, Addresses PSD gaps; next highest group was meeting ISO needs and process evaluation; then design gaps, continues an earlier study, ability to co-fund, and other special priorities.

⁴ Note that 4 can translate to “medium” in word terms. This seems low; however multiple criteria are “opposites” so it is nearly impossible for a project’s aggregate score to reach near the “7” that is the theoretical maximum.

⁵ Very viable, worthy, and needed projects had lower scores, but this plan must be developed subject to a budget constraint and hard choices had to be made.

plan or were better positioned in the next 3-year plan were discussed. We also identified any projects that needed special consideration. Note that for the purposes of the 11/29 meeting we used budget ranges rather than point estimates because we expected to receive and integrate feedback from the Evaluation Committee on our recommended prioritization of studies before we refined individual project budget proposals for discussion on 12/7 and a vote in December 10's committee meeting.

- Finally, we developed the summary table of “Draft Recommendations for the EEB 3 Year Evaluation Budget and Plan”, and prepared a draft memo for review during the 11/29 meeting.
- Distribute memo and matrix of “Draft Recommendations for 3-year Evaluation Budget and Plan” in advance of in-person discussion.
- Hold in-person meeting on 11/29/18 with PowerPoint presentation. The objective was to discuss each project with the attendees⁶, hear comments and suggestions, and use this input to further refine the project designs, budgets, and priorities.
- EA Team considered the input and made revisions to the draft to develop the revised recommendations, including point estimates for the recommended budgets, recommended project phasing, and clarifying the recommended budget total.
- These revised recommendations are distributed in advance of the 12/7/18 conference call to discuss the revised recommendations.
- Taking into account the discussion on 12/7, the EA Team made final refinements and distributed this recommended plan prior the Evaluation Committee meeting and to the EEB.

The remaining steps in the Plan Development / Approval process includes:

- The “Three Year Evaluation Budget and Plan” is voted on in the December Evaluation Committee meeting.
- If the Evaluation Committee approves the plan, the EEB votes on the Plan in the December 2018 meeting and subsequent EEB steps proceed.
- After vote, the EA Team begins the Mini-RFP development process.

⁶ Phone access is also provided.

Summary of Recommendations – Overall Budget

This memo includes summary tables. A separate document includes a larger table that includes more detailed descriptive and scoring information.

Budget Summary and Caveats:

The budgets presented in these tables are for this new set of 2019-2021 Three-year plan projects. The budget does not address any projects that were part of the previous Plan, and particularly does not include projects that started in 2018 but have work that may continue into 2019 or even 2020. All those projects were fully funded from 2018 dollars, and the accruals have been separately accounted for by the utilities. They do not spill over into 2019-2021 evaluation plan dollars.

We understand the 2019-2021 Three Year C&LM Plan included dollars for the Evaluation Plan – which account for / consider the remaining effects of the State Sweep of Energy Efficiency Funds, allocates approximately \$1.93 million for 2019, and \$3 million each for 2020 and 2021 – for a total of **\$7.93 million** over the three-year cycle.

The 2019-21 C&LM Plan program budget total is \$692.965 million.⁷ Using these figures, evaluation represents **1.14% of the program budgets included in the C&LM Plan**. ESource analyzes data on the percent that evaluation budgets represent relative to program budgets. ESource cites 2015/16 numbers for CT as 1.27%. The percentages from seven other available Northeastern States are: New Hampshire (3.17%), Maryland (2.4%), Massachusetts (2.23%); New York (2.06%), Rhode Island (1.02%), Vermont (0.98%) and DC (0.90%). The simple average of these states is 1.83%, **a number that is 44% higher than CT's figure for the same year**.⁸

The percentages for Connecticut's evaluation efforts have declined by about half over the last 7 years – as noted below:

- 2012: 2.1%
- 2013: 1.9%
- 2016-2018 average: 1.4%
- 2019-2021: 1.14% (54% of 2012 budget; 62% of regional percentages)

The EA Team notes that the Recommendations that are presented are recommendations subject to the dollar constraints from the approved C&LM plan. **This is not to be taken as an EA Team recommendation that this list is what we would deem fully sufficient or industry standard for evaluation work for an above average Energy Efficiency State** (as echoed by the E-Source percentages).

⁷ C&LM Plan: <https://app.box.com/s/wmqwin9kxldgm9g2yh7rwijnldi4813/folder/54612014227>

⁸ and partly due to the sweep, CT's percent has fallen more recently. Even excluding NH (the high value, and there is no good reason to exclude it), CT is 27% below average.

Budget for the Three-Year Evaluation Budget and Plan:

Given the constraints of the approved C&LM plan budget, the EA Team has prepared a Recommended Budget and Plan, reflecting the discussion from 11/29 (this document). The tables below summarize the totals – by sector, and by year.⁹

Figure 2: Recommended Evaluation Plan Budget and Project Counts by Sector and Year

Round totals to \$1.93 million, \$3 million, and \$3 million in 2019, 2020, and 2021, respectively

	Cross Sector	Commercial	Residential	Total
2019	\$809	\$240	\$886	\$1,934
2020	\$721	\$745	\$1,528	\$2,995
2021	\$670	\$1,446	\$886	\$3,001
Total	\$2,200	\$2,430	\$3,300	\$7,930
Number of Recommended Projects	6.0	5.0	10.0	21.0
Percent by Sector	28%	31%	42%	100%

This schedule results in 5 cross-sector studies, 2 commercial studies, and 5 residential studies starting in 2019.

Recommended Projects for the Three-Year Evaluation Plan - Projects

A summarized list of recommended projects (sectors, numbers, and titles) are shown below. As shown above, there are:

- 5 commercial projects
- 6 cross-sector (residential and commercial) projects, and
- 10 residential projects recommended.

Our recommendations are designed to obtain greatest value from the projects, and the allocated budget. The recommended project lists, including commercial, cross-sector, and residential sectors, are recorded below.

- Figure 3 lists the recommended projects;
- Figure 4 lists those not recommended, and
- Figure 5 list those project concepts that were merged into other projects.

Detailed information on each recommended project – including summary project outcomes and the rationale for selection follows in the next four figures – Figures 6, 7, and 8a and 8b.

Figure 9 provides a snapshot of the budgets and scores for each recommended project. The rationales summarize the EA Team’s assessment of the project, and are a key part of this document.

⁹ Contracted totals are developed after the RFPs are released, scored, and selected. We recognize the overall contract total must be no larger than the adopted plan total.

Notes on Specific Projects / Projects Bearing Special Attention:

The team is applying all its best efforts to develop this low-cost option for Connecticut. We are already using our collective knowledge of other work in the region and country, and our knowledge of CT's priority needs, to develop this abbreviated list. Several projects bear special mention.

- **Potential Studies:** Broad potential studies can be very useful for evaluating current performance, remaining potential, and helping guide next priorities. However, they can be expensive. Due to the constrained budget, we opted for potential study research conducted on specific measures or sub-sectors, providing more focused research on highest-priority targets. Therefore, for instance, X1938 and R1976 are not recommended, but potential study elements have been incorporated into R1968, R1982, R1959, and others.
- **Multifamily (MF) Impact Evaluation – Revised Treatment:** This is an important and growing sector of the customers, and focused evaluation is important. After discussion with the Committee, this project is recommended, but specifically recognizes that the project has elements of commercial and residential evaluation. Data issues make it necessary to use non-billing analysis methods for the impact work. The project is included in the budget.
- **Phasing of Commercial Evaluations:** Normally, we would recommend evaluations (process and impact) for all major programs, conducted on a 3-year cycle. Currently, for budget reasons, we have adopted a 5-year cycle for the expensive (but very important) commercial projects, using the requirement of a 5-year cycle for ISO as the absolute minimum. Note, however, that we recommend moving early phases of one commercial impact evaluation (EO) project forward by one year, and into this current 2019-21 Three-year Plan cycle. The EO evaluation is moved forward for several reasons. If we do not, total budgets for three very large C&I evaluations occur in the same three-year cycle, taking up a very high portion of available budgets, and making it nearly impossible to evaluate residential projects. Second, this is one of the largest programs and should be evaluated more often. Third, the last evaluation of this program was conducted on older participants than the other projects, and finally, the last impact evaluation of this project raised some concerns about the documentation of savings, and earlier review will hopefully address this issue. The project (C1920) is labeled "Phase 1" and is undertaken in 2021. This initial year includes design and some first season metering. The follow-on project conducts the remaining metering and analysis. We believe the second phase will take on a new number for budget year allocation reasons, but the two project numbers are put out for RFP as one project with two phases in the RFP process.

Throughout, the project scope and budgets were refined to reflect collaborative discussions and priorities.

Project Tables:

Figure 3: Recommended Project List –Projects, Budgets, and Score

(X-Cross-sector; C=Commercial; R=Residential)

LineNew	Project #	Project Name	FINALPOINT BUDGET in K	Percent 2019 Spend	Percent 2020 Spend	Percent 2021 Spend	Total score w
1	X1931	In-Depth PSD Review (All sectors)	\$625	75%	25%		5.5
2	X1941	MF Impact evaluation (merges in R1971)	\$400	50%	50%	0%	5.2
3	X1932	DR EM&V Support (All sectors)	\$375	5%	20%	75%	4.9
4	X1939	Early retirement initiatives evaluation (All sectors)	\$275	35%	40%	25%	4.9
5	X1940	2020-2021 Study of Emerging Issues	\$400	0%	20%	80%	4.4
6	X1942	Cross-Cutting NEI studies (merges in R1942)	\$125	20%	80%		4.3
11	C1902	ECB NTG and Baseline	\$600	0%	35%	65%	5.8
12	C1920	EO Impact Evaluation - Phase 1	\$565	0%	0%	100%	4.9
13	C1918	SBEA Impact Evaluation	\$375	0%	0%	100%	4.8
14	C1901	C&I Sector-wide Process Evaluation (non-SBEA)	\$615	30%	70%	0%	4.4
15	C1906	SEM Evaluation	\$275	20%	38%	42%	4.0
22	R1982	Residential HVAC/DHW Performance and Potential Assessment	\$765	60%	20%	20%	6.2
23	R1968	RNC Baseline and Potential Study	\$315	0%	15%	85%	5.4
24	R1965	HP / HPWH Baseline and Potential Assessment	\$265	60%	40%	0%	5.3
25	R1983	HES & IE Process and NTG Evaluation	\$425		100%		5.3
26	R1963	Short Term Residential Lighting Analysis	\$150	85%	15%		5.2
27	R1984	HES & IE Impact Evaluation	\$300	0%	10%	90%	5.2
28	R1960	SF Weatherization Assessment / Update	\$650	0%	70%	30%	4.9
29	R1973	Retail Non-Lighting Products Impact and Process evaluation	\$225	50%	50%		4.7
30	R1959	SF Renovation and Additions Potential Analysis	\$140	20%	80%		4.6
31	R1969	Impact Evaluation / retention of behavioral program savings	\$65	0%	100%		4.0

Figure 4: Projects Not Recommended, Budgets, and Scores

(X=Cross-sector; C=Commercial; R=Residential)

Line	New	Project #	Project Name	EA Lead (temp)	Total score weight
7	X	X1933	Demonstration EM&V Support (all sectors)	NOT REC	4.3
8	X	X1938	Potential Study (All Sectors) (Not recommended, in favor of targeted potential)	NOT REC	3.5
9	X	X1935	Zero Net Energy New Construction/ZNE-NC (All Sectors) (Not recommended)	NOT REC	3.1
10	X	X1936	Property Record Data Leveraging (All sectors) (Not recommended)	NOT REC	2.9
16	C	C1915	BES Impact Evaluation (next cycle) (Not recommended this cycle)	NOT REC	3.6
17	C	C1914	Largest Savers Impact Evaluation (Not recommended)	NOT REC	3.5
18	C	C1917	NEI primary research (not recommended)	NOT REC	3.1
19	C	C1907	Monitoring-Based Commissioning Research (not recommended)	NOT REC	3.1
20	C	C1913	Midsize Business Impact Evaluation (process merged into C1901/impact not recommended)	NOT REC	2.9
21	C	C1910	Small Business Customer Profiling (not recommended)	NOT REC	2.4
32	R	R1971	MF Impact evaluation (not recm - merged into X41)	NOT REC	4.6
33	R	R1980	WIFI Thermostats	NOT REC	4.5
34	R	R1978	Residential NEI studies (Not Recm /merged into X42)	NOT REC	4.3
35	R	R1961	TOU Rate Evaluation (Not recommended)	NOT REC	3.8
36	R	R1981	Fuel Conversion Potential / Realization (not recommended)	NOT REC	3.7
37	R	R1976	Potential study - residential (Not recommended / in favor of targeted potential)	NOT REC	3.4
38	R	R1962	Zero Energy Pilot Study (Not recommended)	NOT REC	2.6

Figure 5: Project Concepts Merged into other Projects (Not evaluated separately)

(X=Cross-sector; C=Commercial; R=Residential)

Line	LineNew	Project #	Project Name	EA Lead (temp)
37	39	X1937	Heat Pump Baseline and Potential (All sectors) (Merged into R1965/R1982)	Merged
38	40	X1908	Measure life study (All Sectors) - Merged into X1931)	M
41	41	C1903	Cross Program PSD Research and Update (Merged into X1931)	M
42	42	C1912	ECB Baseline / NTG (Merged into X1902)	M
43	43	C1911	Non-SBEA Process Evaluation (Merged into C1901)	M
44	44	C1909	Locational Incentive Analysis (merged into C1901)	M
47	47	C1904	DR Pilot Evaluations (Merged into X1932)	M
48	48	C1905	Pilot Project Evaluation Support (merged into X1933)	M
49	49	C1908	Lifetime & Persistence Research (merged into X1931)	M
50	50	C1916	ECB Net-to-Gross Ratios and Baselines (merged into C1902)	M
52	52	R1951	HES Air Sealing, Duct Sealing, and Insulation Follow-up (merged into R1983)	M
53	53	R1957	Products Initiative, ISR, Retention, NTG, and Customer Feedback Study (Merged into R1973)	M
54	54	R1953	Home Energy Solutions (HES) Net-to-Gross (NTG) (Merged into R1983)	M
55	55	R1974	Early retirement initiatives evaluation - Residential (merged into X1939)	M
56	56	R1970	LI Process evaluation (merged into R1983)	M
57	57	R1956	HVAC Upstream/Midstream Market Assessment (Merged into R1982)	M
58	58	R1955	HVAC and DHW Performance Assessment (Merged into R1982)	M
60	59	R1954	DOE Home Energy Score Process Evaluation (Merged into R1983)	M
61	60	R1958	PSD Parameter, lifetime and carbon reduction review (Merged into X1931)	M
62	61	R1952	Health and Safety Process Evaluation (Merged into R1983)	M
63	62	R1966	Real Time Lighting market monitoring to inform withdrawal strategy (merged into R1963)	M
64	63	R1967	HP Electrification Market and Potential Study (Merged into R1965)	M
65	64	R1972	Financing impact / process evaluation (merged into R1983)	M
66	65	R1975	Workforce Study (deleted)	M
67	66	R1977	Retail Products Evaluation (Merged into R1973)	M
68	67	R1979	HES/HES-IE Process Evaluation (merged into R1983)	M
59	68	R1964	Ducted /ductless HP impacts and heating displacement (Merged into R1965)	M

Figure 6: Cross-Cutting Projects (shaded are NOT recommended)

Project	Project Name	EA Lead (temp)	Summary of project deliverables	Rationale for Recommendation
X1931	In-Depth PSD Review (All sectors)	LAS/RW	Assurance that PSD provides adequate guidance on savings and input parameters. Compile data from past CT studies, do a TRM review and update numbers, and make recommendations for sustainable approach going forward. Includes data-driven review of measure lifetimes as part of the work - EUL / persistence values need assessment. antique, poorly vetted, and don't take into account recent issues related to market lifetimes. Study identifies weak numbers to help target future evaluation work. We specifically include funds for targeted follow-up activities based on results of review - and plans for other next steps. The targeted primary research topics will be discussed with the committee prior to commencing the work. This project involves considerable coordination with the utilities and with the Technical consultants.	In-depth PSD review (all sectors). PSD is important for savings claims for residential & especially commercial. Study budget constraints mean some studies have limited sample sizes and some are not updated frequently. It has been too long since there has been an independent, overall look at the PSD for C&I. This study is important to make sure latest numbers are embedded in PSD, and that entries that are old or have validity issues can be prioritized for replacement through CT EM&V studies or other nearby state EM&V studies or updates. This includes all types of inputs INCLUDING measure lifetime assumptions, which may include recommended updates based on relevant technical lifetime and/or market replacement factors. We anticipate building in a task to do targeted empirical research on parameters found to be most problematic. Verification of MF assumptions likely one issue needing review. Does not change structure of PSD. We specifically include funds for targeted follow-up activities based on results of review - and plans for other next steps. The targeted primary research topics will be discussed with the committee prior to commencing the work. This project involves considerable coordination with the utilities and with the Technical consultants. High priority.
X1941	MF Impact evaluation (merges in R1971)	RW	MF Impact Evaluation: MF, a growing sector, contains elements of residential and commercial; hence reclassification as a cross-cutting project, to make sure the commercial elements are well-addressed. An impact evaluation similar to the SF R1984 was suggested, however, data issues make a billing analysis infeasible. MF remains an important sector and as such an alternative impact approach using engineering assessment and on-site data collection is recommended	The multifamily sector is an important and growing sector in CT. An impact evaluation focused on this subgroup would be valuable and make certain that substantial attention is paid (and includes building and units) rather than it trading off with a simpler SF group, with MF getting short shrift. MF savings includes both residential and commercial projects, thus its classification as a cross-cutting evaluation project. MF savings need to be well-supported in the PSD and in savings estimates for programs. Impact Evaluations include savings (kWh and kW and gas), realization rate and possibly other information. Because data is not available to do a billing analysis, study will rely on on-sites, customer surveys, and engineering assessments. Examines reasons for realization rate differences.
X1932	DR EM&V Support (All sectors)	RW	DR EM&V support (all sector): As the utilities undertake tests of residential and commercial demand response initiatives it is important to design and conduct EM&V that provides a robust understanding of the variables that influence performance, scalability, and true impacts so public funds are well-spent. EPRI recognized the difficulty and published guidance. The EA needs resources to help CT ensure that pilots use best practices for design / data / analysis / evaluation - EA Oversight role continues until current contracts expires and transitions into EA implementation of evaluations.	DR EM&V support (all sector): As the utilities undertake tests of residential and commercial demand response initiatives it is important to design and conduct EM&V that provides a robust understanding of the variables that influence performance, scalability, and true impacts so public funds are well-spent. EPRI recognized the difficulty and published guidance. The EA needs resources to help CT ensure that pilots use best practices for design / data / analysis / evaluation - EA Oversight role is low end; higher end has EA more involved in evaluation.
X1939	Early retirement initiatives evaluation (All sectors)	RP	Recommendations regarding both updated impact parameters and program design and implementation improvements for new early retirement/modernization initiatives being offered by the CT utilities in 2019-2021.	Early retirement/modernization initiatives are frequently discussed in the 3-year plan, and these will need to be evaluated, both to address the unique impact evaluation issues they raise and to provide recommendations for improvements to initiative design and implementation. C&I initiatives appear to be further along, and thus are likely to be studied first.
X1940	2020-2021 Study of Emerging Issues	RP	Addressing new information needs in 2020-2021 stemming from the emergence of new technologies, changes in market conditions, and/or evolution of program designs.	With a three-year planning horizon for EM&V studies, it is likely that by the end of the three-year period there will be significant changes -- whether in emerging technologies, market conditions, or program designs -- that could not be predicted in late 2018, but that nonetheless create important new information needs. This study will address these needs, with specific focus to be determined as part of the mid-term update process in 2020.
X1942	Cross-Cutting NEI studies (merges in R1942)	LS	Provide data & information to support review / revision work of CT cost-effectiveness test, building on policy directions, priorities examined in previously completed residential study, with early focus on utility and societal impacts as well as O&M and arrears. Primary and some secondary research to develop CT-specific NEIs; data focused, not focused on pure literature review	Cross-cutting NEI studies: Should plan to do some NEI research in 2019-21. CT is reviewing C/E tests and this project supports the policy discussions / implications. Includes a focus on O&M, arrears, utility and societal effects. some of the NEIs that will be developed for CT may cross residential and commercial sectors, so it is cross-cutting. The residential side is informed by the literature review just conducted. The research is feasible and not highly costly. Integrate HES NEIs into process evaluation; this study addresses other elements.
X1933	Demonstration EM&V Support (all sectors)	NOT REC	Support program evolution by assisting in developing pilots and test cases that have adequate rigor to provide the information necessary for determining the efficacy and potential for the new offers.	Demonstration EM&V support (all sectors): Similar to the demand pilots, it is important for demonstrations and tests to be designed and studied with appropriate rigor to ensure conclusions are defensible, and lessons are documented to support future decisions regarding services/measures to/for the targeted area. Budget assumes evaluations will be performed outside of evaluation budget but that EM&V is involved at oversight in multiple phases from conception / design to completion.
X1938	Potential Study (All Sectors) (Not recommended, in favor of targeted potential)	NOT REC	Assessment of technical, economic, and achievable potential, with a focus on peak demand reduction. SF portion can be a follow-on to earlier study that focused on SF.	Potential Study (all sectors): Potential studies can be important for targeting measures with greatest potential and understanding baseline changes; Cross-cutting / multi-sector may be most appropriate and informative. However these studies can be very expensive and take time. Our current recommended approach, given tight budgets, is to conduct potential studies on individual measures / groups of measures to sidestep the cost issues and focus on priority strategies - discussed in other entries under residential and commercial sectors. Hence this does not receive as high points as individual measure potential studies.
X1935	Zero Net Energy New Construction/ZNE-NC (All Sectors) (Not recommended)	NOT REC	Market research on how to best encourage ZNE construction; performance assessment for sample of homes.	ZNE NC (all sectors): This program is not likely to provide large savings in the next 3-6 years but has long-term potential. This study analyzes early adopters. Work has been conducted in CA, but results are unlikely to be fully transferable. May not be a priority in this cycle; early adopters likely not best audience, and may not be best use of scarce dollars.
X1936	Property Record Data Leveraging (All sectors) (Not recommended)	NOT REC	The study's primary objective is the development of a statewide property database, based on municipal tax assessor records, to provide residential and commercial statewide data for programs as well as other evaluation/research studies. Key statewide data that is typically available from tax assessor records include: land use type, building size and number of floors, building occupancy, building vintage, heating fuel, primary heating system, and primary cooling system.	Property Record Data: Data in CT is a problematic issue. This study would work to leverage public data and utility data to get improved understanding of customers. This has been valuable in MA; however, concerns about additional data from CT utilities or to utilities. By itself, obtaining the data is not expensive, but matching / using would be an expensive undertaking. Inevitably all the data are likely to be online in the future. Not considered priority for limited budget.

Figure 7: Commercial Projects (shaded are NOT recommended)

Line/View	Project	Project Name	EA Lead (temp)	Summary of project deliverables	Rationale for Recommendation
11	C1902	ECB NTG and Baseline	JC	This study will update baselines and net-to-gross ratios for true new construction and end of life replacements. It will incorporate baseline assessment to ensure that savings and attribution calculations are aligned. This study updates specific PSD values that are widely used across the ECB program in savings analysis and reporting.	ECB NTG & Baseline: This is a core component of impact evaluation. Net to Gross helps ensure that we are accounting for normal activity in the market and ratepayers are not paying for incentives for what the market is already doing. In addition, where programs are fostering market change, they should get appropriate credit for spillover. Baseline is vital for proper savings attribution. CT has been lacking this primary research on baselines. High priority.
12	C1920	EO Impact Evaluation - Phase 1	DJ	Begin Phase 1, EO impact evaluation (including upstream lighting program) at the end of the 2019-21 period. Study 2020 and 2021 participants, with first wave of 2020 participants studied in 2021. First stages (sample design, M&V plans, 1st season metering). Full project includes the following. Update gross savings realization rates for electric energy(kWh) and demand (kW) and natural gas savings. Demand savings evaluation to meet ISO NE standards. Develop inputs for PSD and assess current utility practices for determining retrofit baselines with recommendations for improvement.	Start the evaluation of the largest C&I program, Energy Opportunitites (including upstream lighting) on a more accelerated schedule. Rationale is to: 1) provide more timely feedback on the largest C&I program; 2) avoid having all major C&I impact evaluations occur on the same cycle, causing a high burden on utility staff to supply large amounts of data simultaneously and a bubble in evaluation spending; 3) Verify promised improvements in data collection practices needed to conduct impact evaluations.
13	C1918	SBEA Impact Evaluation	DJ	Provide timely impact evaluation of the SBEA program to meet ISO NE FCM requirements. Outcomes include revised energy and peak demand realization rates and possible PSD updates	SBEA Impact Evaluation: Impact evaluation for this project will be needed in 2022 (next 3 year plan) to match 5-year ISO needs (2019/20 participants) and first stages of this project must begin within this three-year cycle. High priority project.
14	C1901	C&I Sector-wide Process Evaluation (non-SBE)	DJ	This cross-program targeted C&I process evaluation will inform program design and delivery for the largest energy efficiency programs in CT using a new approach that will capture economies of scale, ability to prioritize areas of inquiry to reflect program and portfolio foci, capture synergies across programs, reduce data burden to utilities and limit study burden on customers and market actors. The study will focus on specific areas of interest including financing, sales strategies, differences between utility territories and vendors, depth of savings, comprehensiveness, types of projects, data collection and tracking, and a comparison of upstream program performance and delivery relative to other states in the region. The study will examine these areas across all affected programs to identify best practices and opportunities for improvement. The study will produce actionable findings that can be used to increase savings, decrease costs and maximize customer equity.	C&I Sector-wide Process Evaluation: Project addresses key process issues for the biggest C&I programs. Addressing C&I process issues globally will address common issues, allow prioritization of most important issues, and provide economies through a single contract. The study will identify which program elements are working well and investigate new program elements early so course corrections can be made as needed. High priority project.
15	C1906	SEM Evaluation	JC	This combined impact and process evaluation will look at savings methods, program processes and savings assumptions such as measure life. The study will support the utilities ability to claim savings for the Strategic Energy Management Program. SEM is currently being offered and the most recent Business Energy Services Evaluation found that the utilities are not claiming savings for this work with large customers. Gaps that will be explored include: what models can program implementers use to claim savings for SEM and what information does evaluation require to evaluate the models and methods; what is the measure life for SEM improvements relative to both the period during which the customer is directly engaged in SEM with the utilities and after utility funding for SEM is withdrawn and the practices instituted under the program remain. Are the program processes effective and how can they be improved? How can SEM get credit for capital improvement projects that result from a customer's SEM engagement?	SEM Evaluation: Programs are implementing SEM, but not claiming savings. Evaluating SEM is very difficult, but the savings are real and it impacts the largest customers. We need to invest in helping the programs understand the methods for tracking and evaluation. High priority. In addition, measure life research is needed as part of this work.
16	C1915	BES Impact Evaluation (next cycle) (Not recommended)	NOT REC	Determine the influence of low-cost/no-cost programs on future capital C&I participation and portfolio cost-effectiveness. Determine how PRIME, RCX, O&M, and BSC compare with similar programs nationwide. Refresh and improve statistical confidence in program-specific results from PY2015 BES evaluation, as some programs have changed significantly. Evaluate BSC program for the first time.	BES Impact Evaluation: Process evaluation included in C1901; Impact evaluation was recently completed and important SEM elements are addressed in C1906. Not yet in 5 year cycle. Low priority for this cycle; needed in next cycle.
17	C1914	Largest Savers Impact Evaluation (Not recommended)	NOT REC	Determine gross and net RRs for the largest savers within ECB and EO programs. Provide forward-looking realization rates that incorporate the most recent measure-level updates from the Connecticut PSD. Update the PSD algorithms with most recent measure level findings. Quantify site-specific NTGRs for the Largest Savers and develop recommendations for maximizing program influence on large projects.	Largest Savers Impact Evaluation: Completed recently. Important process elements addressed in C1901. Doing a new study is inconsistent with current strategy of program-specific impact evaluations. Low priority this cycle.
18	C1917	NEI primary research (not recommended)	NOT REC	Provide data & information to support review / revision work of CT cost-effectiveness test. Primary and some secondary research to develop CT-specific NEIs; data focused, not focused on pure literature review	NEI Research (all sectors): CT has been working on NEIs and updates to C/E tests. NEI research in residential has identified feasible value ranges and gaps; commercial work has not been undertaken in CT. Several societal and utility NEIs from residential work are cross-sector; team recommends holding on this work until after C/E work is further along and residential work has progressed so CT work can be best targeted.
19	C1907	Monitoring-Based Commissioning Research (Not recommended)	NOT REC	This research will identify savings estimates from monitoring-based commissioning. This emerging technology has strong savings potential but research is still developing. Additionally, this research would identify key drivers of adoption, and challenges experienced by both adapters and non-adapters.	Monitoring-based commissioning research: Can be important in states where commissioning programs and in particular monitoring-based commissioning programs are an emphasis; CT is not. Most of the commissioning in CT is included under BES, so evaluated there. Low priority.
20	C1913	Midsize Business Impact Evaluation (process)	NOT REC	Benchmark with similar programs nationwide and develop process recommendations for the new program. Develop RRs and FRRs for medium sized (200 - 500 kW) businesses participating in Eversource's new program. If initial participation rates are low, consider pilot impact evaluation approach. Update PSD reference values with most recent measure level findings.	Midsize business impact evaluation: Given new mid-sized business initiatives in Plan, they should be evaluated. Process elements addressed in C1901. Impact evaluation on a new, somewhat uncertain initiative is premature (at most, place late in cycle). However, must be clear which program(s) any realization rates, etc. would apply to. Low priority.
21	C1910	Small Business Customer Profiling (not recommended)	NOT REC	Improve understanding of key small business customer segments; Identify strategy and customer engagement enhancements to drive program participation	Small business customer profiling: Last small business process evaluation was fairly thorough; any remaining priority issues can be better covered in C1901. Low priority.

Figure 8a: Residential Projects (shaded are NOT recommended); Part 1

LineNew	Project	Project Name	EA Lead (temp)	Summary of project deliverables	Rationale for Recommendation
22	R1982	Residential HVAC/DHW Performance and Potential Assessment	RW	Defensible estimates of HVAC, including DHP and DHW including HPWH are a big unknown for both energy and peak demand impacts. This project will use the recent RASS study to develop a sample of CT homes and meter end uses to develop seasonal and peak performance values.	Residential HVAC / DHW Performance and Potential Assessment: Defensible estimates of HVAC, including DHP and DHW including HPWH are a big unknown for both energy and peak demand impacts. This project will use the recent RASS study to develop a sample of CT homes and meter end uses to develop seasonal and peak performance values. High priority
23	R1968	RNC Baseline and Potential Study	RW	Characterization of construction practices in new RNC homes, including both participants and non-participants.	The last RNC baseline study was completed in December, 2017, based on homes completed in 2014 and 2015. RNC baseline studies are needed at least every 3-4 years in order to update impact parameters, support program redesign, and feed into future attribution studies. A new RNC baseline study will therefore be needed by the end of the 2019-2021 program cycle.
24	R1965	HP / HPWH Baseline and Potential Assessment	RW	HP / HPWH Baseline & Potential Assessment: HP electrification is increasingly important throughout the Northeast and is a component of the 3 year program plan. This study examines the elements of its potential for program design refinement.	HP / HPWH Baseline & Potential Assessment: HP electrification is increasingly important throughout the Northeast and is a component of the 3 year program plan. This study examines the elements of its potential for program design refinement.
25	R1983	HES & IE Process and NTG Evaluation	LS	HES & HES process evaluation will address traditional process and NTG issues, but also incorporate several important specialty issues – low income, financing, health & safety, and important follow-up work to the HES air / duct sealing and insulation practices. The 2016 R151 Study identified a variety of opportunities for the HES program to increase program savings (especially deeper savings). In particular, the study identified some issues with contractor approaches and shortcomings with QA/QC efforts. This follow-up study would assess how the program has reacted to findings and what if any changes have been incorporated into the program. This followup could also include an impact component to quantify remaining savings opportunities.	HES & IE Process & NTG Evaluation: This integrated process evaluation covers the program's basics, but also drills down on installation practices, and updates the NTG results, which are overdue. The process evaluation will also include a strong focus on low income participants, and address specialty issues including financing and other topics. High priority study.
26	R1963	Short Term Residential Lighting Analysis	RP	Market assessment on the degree to which residential lighting markets have been transformed and whether and to what extent continued market intervention is needed. The principal focus should be on retail markets, including HTR, but any information to inform in-home DI for HES and HES-IE would also be useful. Current target date for results is Q3 2019, but the lighting market is sufficiently dynamic that could change; for example, information could be needed again in 2020.	ST Residential Lighting Analysis: Vital study during transition, magnitude of savings at stake, and attendant uncertainties. Current target date for results is Q3 2019, but the lighting market is sufficiently dynamic that could change; for example, information could be needed again in 2020.
27	R1984	HES & IE Impact Evaluation	RW	If we are keeping with a 3 year cycle for impact evaluations, a new HES impact evaluation will be needed in 2020. Impact Evaluation including savings (kWh and kW and gas), realization rate and possibly other information. Uses billing analysis and potentially, customer surveys. Examines reasons for realization rate differences.	HES & IE Impact Evaluation: Large, important residential program. If we stay on a 3 year cycle for residential evaluations, this study will come up for review within the three-year plan. Planned for late cycle.
28	R1960	SF Weatherization Assessment / Update	LS	The 2014 R5 Study assessed the performance of homes relative to EEB's draft weatherization standard, created in response to Connecticut's 2011 legislative goal of weatherizing 80% of homes by 2030. These findings are out of date at this point, and a new baseline study would update progress toward that legislative milestone and identify savings opportunities for Company weatherization programs. Because the definition of "weatherization" is not entirely nailed down, the study will be designed so that the data collected can be used to identify compliance based on multiple possible definitions of Weatherization. Onsite work will be coordinated with other projects as possible, for economies. Project may be able to provide input on opportunities for other electrification opportunities, such as for mini-split heat pumps, heat pump water heaters, Advanced Power Strips, and EV chargers.	SF Weatherization Assessment: Timely for next benchmarking of progress in weatherization per legislative goal. To extent possible, integrate with RASS as well to acquire additional weatherization data. An important element is recognizing the definition of "weatherization" is still a bit fluid and this study must collect the data to allow reporting of compliance with an array of possible weatherization definitions. Functions as a targeted potential study.

Figure 8b: Residential Projects (shaded are NOT recommended); Part 2

Line/New	Project	Project Name	EA Lead (temp)	Summary of project deliverables	Rationale for Recommendation
29	R1973	Retail Non-Lighting Products Impact and Process evaluation	RP	Improved impact parameters for participants in non-lighting retail products offerings; recommended improvements to program design and implementation.	Residential Products Impact Evaluation: Although near term savings may not be large, there are many unknowns, and clarity is needed to identify the role RPP will play in CT's overall residential products portfolio. High priority study.
30	R1959	SF Renovation and Additions Potential Analysis	RW	Determine the size of the SF renovation and additions market in CT. Determine the scope of these projects. Determine the potential savings available for a new program offering. Leverage 2018 MA study to learn about opportunities for a new renovations/additions program. Early process evaluation of new CT program.	SF Renovations & Additions Potential Analysis: Examines size of SF R&A market and key measures. Targeted potential analysis. Phase this to follow / leverage off MA study.
31	R1969	Impact Evaluation / retention of behavioral program savings	LS	Study provides an impact evaluation of this program, and retention / persistence for past HER customers that were discontinued. The impact evaluation timing will be modified to fit with the project's status; programs delivered and counted on for savings should be evaluated. If the program is continued, the impact will be sooner; if starting later or re-started, the impact analysis reflects this. If merged into the engagement platform (and if savings are not counted) the project will be re-discussed.	Impact Evaluation / retention of behavioral program savings: Follows previous impact and persistence studies series and influences design and cost-effectiveness. Large associated savings and only Eversource was covered in last impact evaluation. Impact work will be tailored to status of program - programs funded are expected to be evaluated. If program continues, impact evaluation is earlier; if re-started, the timing is adjusted. If blended into customer engagement and savings are not counted, impact evaluation is discussed and presumably discontinued. Project is relatively inexpensive and needs updating periodically.
32	R1971	MF Impact evaluation (not recm - merged into X41)	NOT REC	The multifamily sector is an important and growing sector in CT. An impact evaluation focused on this subgroup would be valuable and make certain that substantial attention is paid (and includes building and units) rather than it trading off with a simpler SF group, with MF getting short shrift. MF savings includes both residential and commercial projects, thus this project is being replaced / merged into a cross-cutting evaluation with a revised design (no billing analysis). MF savings need to be well-supported in the PSD and in savings estimates for programs. Impact Evaluations include savings (kWh and kW and gas), realization rate and possibly other information.	MF Impact Evaluation: An impact evaluation similar to the SF R1984 was suggested, however, data issues make a billing analysis infeasible. MF remains an important sector and as such an alternative impact approach using engineering assessment and on-site data collection is recommended.
33	R1980	WiFi Thermostats	NOT REC	Study's focus is to provide information on next generation thermostats including performance by type of thermostat (wireless, learning, those with DR potential, etc.), reliability, costs, suitability in CT, and gaps in research and results needed to consider the measures in CT. The study assembles research from other locations. If available information is not sufficient for utilities to add these thermostats into programs, provide design / input into design of pilot test of thermostats in residential & commercial applications in CT for credible / independent Third party evaluation of the measure. If already in field, design evaluation to be conducted. Goal is reliable information on feasibility / potential for newer technology and credible evaluation plan. Leverage with DR work.	WiFi Thermostats: Important measure and changing role for measure; research unclear / need to understand best performers, etc. for programs going forward. Impact study might cost as much as \$500K, but perhaps adjust MA research for that part.
34	R1978	Residential NEI studies (Not Recm /merged into X42)	NOT REC	Provide data & information to support review / revision work of CT cost-effectiveness test, building on priorities examined in previously-completed residential study. Primary and some secondary research to develop CT-specific NEIs; data focused, not focused on pure literature review	Residential NEI studies: CT is reviewing C/E tests and the literature review indicates information for primary data for CT. The research is feasible and not highly costly. Integrate HES NEIs into process evaluation; this study addresses other elements. Should plan to do some NEI research in 2019-2021.
35	R1961	TOU Rate Evaluation (Not recommended)	NOT REC	Assess: level of customer awareness and satisfaction of current rate offerings; customer responsiveness to price signals; impact and effectiveness of rate structure/option with regard to peak load reduction; any impact on conservation demonstrated through time-varying rates; equity impact on various customer segments (in particular, income-qualified customers); elements of dynamic pricing design relative to best practices (e.g., peak to off peak ratio, peak period/seasonal definitions).	TOU Rate Evaluation: To the extent TOU programs are implemented as part of the 3-year plan, they need evaluation. However, we are lowering the priority in favor of evaluations of traditional, DR, and demonstration evaluations; we are not completely certain if TOU is EE/EM&V responsibility. To the extent some of the DR programs includes TOU they are covered in DR evaluations (X1932) project.
36	R1981	Fuel Conversion Potential / Realization (not recommended)	NOT REC	The vast majority of fuel conversions are not high efficiency units. This study will determine why program is not capturing a higher percentage of high efficiency conversions, and provided recommendations as to how program can encourage more high efficiency installations.	Fuel Conversion Potential / Realization: There is activity in this area but it is unclear what the realization and potential are for these conversions. It is important to understand what is happening and refine policy to support overall goals. Needs more sophisticated analysis.
37	R1976	Potential study - residential (Not recommended / in favor of targeted potential)	NOT REC	Assessment of technical, economic, and achievable potential, with a focus on peak demand reduction, wi-fi tstats, heat pumps, electric vehicle load management. Follows-on to earlier study that focused on SF.	Residential Potential Study: Important for targeting greatest potential. May be better as multi-sector study, but expensive. Approach for addressing high cost is to focus on potential for priority measures and sectors. Lower priority, partly because of cost.
38	R1962	Zero Energy Pilot Study (Not recommended)	NOT REC	Market research to inform program planning for possible Net Zero Energy (NZE) Home Retrofit Program. This includes exploring consumer and contractor interest in retrofits and consumer interest in loan options.	ZE Pilot Study: Emerging focus / technologies, but recommend lower priority here than X1902, as new construction greater near term reality than ZNE retrofits. Low Priority.

Figure 9 lists the project numbers / names, and the scores for each of the individual criteria. Each of the projects was reviewed and evaluated by multiple EA team members, and the results were discussed and refined by the Team as a whole. The scores for the projects are summarized below.

Figure 9: Individual Project Criteria Scores

LineNew	Project #	Project Name	EA Lead (temp)	FINAL POINT BUDGET	Average Score	Total score weight	Impact evaluation	Process evaluation	Project has not	High C&LM Plan	Needed to meet	Addresses important	Addr. important	Follows another	Ability to co-fund	Other important
1	X1931	In-Depth PSD Review (All sectors)	LAS/RW	\$625	H	5.5	VH	VL	VH	VH	VH	VH	M	VL	L	H
2	X1941	MF Impact evaluation (merges in R1971)	RW	\$400	MH	5.2	H	MH	H	MH	MH	H	VH	MH	L	VL
3	X1932	DR EM&V Support (All sectors)	RW	\$375	MH	4.9	MH	MH	H	ML	H	H	H	L	ML	M
4	X1939	Early retirement initiatives evaluation (All sectors)	RP	\$275	MH	4.9	H	H	H	M	M	H	H	VL	M	M
5	X1940	2020-2021 Study of Emerging Issues	RP	\$400	M	4.4	H	H	M	M	M	M	M	M	M	M
6	X1942	Cross-Cutting NEI studies (merges in R1942)	LS	\$125	M	4.3	H	H	VH	L	VL	VL	H	VH	VH	MH
7	X1933	Demonstration EM&V Support (all sectors)	NOT RECM		M	4.3	H	MH	H	ML	ML	M	H	L	ML	MH
8	X1938	Potential Study (All Sectors) (Not recommended, in favor of t	NOT REC	\$0	M	3.5	L	VL	H	H	VL	L	VH	MH	L	VH
9	X1935	Zero Net Energy New Construction/ZNE-NC (All Sectors) (Not	NOT REC	\$0	ML	3.1	L	M	H	L	VL	ML	MH	ML	ML	H
10	X1936	Property Record Data Leveraging (All sectors) (Not recomm	NOT REC	\$0	ML	2.9	L	ML	ML	M	L	L	MH	ML	L	MH
11	C1902	ECB NTG and Baseline	JC	\$600	H	5.8	VH	ML	H	VH	H	VH	H	MH	L	MH
12	C1920	EO Impact Evaluation - Phase 1	DJ	\$565	MH	4.9	H	VL	H	VH	M	H	M	H	VL	H
13	C1918	SBEA Impact Evaluation	DJ	\$375	MH	4.8	VH	VL	VH	MH	MH	MH	M	MH	VL	M
14	C1901	C&I Sector-wide Process Evaluation (non-SBEA)	DJ	\$615	M	4.4	L	VH	VH	VH	L	ML	VH	M	VL	MH
15	C1906	SEM Evaluation	JC	\$275	M	4.0	MH	ML	H	ML	ML	MH	MH	ML	ML	ML
16	C1915	BES Impact Evaluation (next cycle) (Not recommended this c	NOT REC	\$0	M	3.6	MH	MH	L	M	ML	M	M	M	VL	M
17	C1914	Largest Savers Impact Evaluation (Not recommended)	NOT REC	\$0	ML	3.5	H	VL	L	H	ML	ML	L	MH	L	ML
18	C1917	NEI primary research (not recommended)	NOT REC	\$0	ML	3.1	L	MH	VH	L	VL	VL	H	ML	L	H
19	C1907	Monitoring-Based Commissioning Research (not recommend	NOT REC	\$0	ML	3.1	L	ML	MH	L	ML	ML	M	L	M	ML
20	C1913	Midsize Business Impact Evaluation (process merged into C1	NOT REC	\$0	ML	2.9	M	VL	M	ML	ML	ML	M	VL	VL	ML
21	C1910	Small Business Customer Profiling (not recommended)	NOT REC	\$0	L	2.4	VL	L	MH	ML	VL	L	MH	L	VL	ML
22	R1982	Residential HVAC/DHW Performance and Potential Assessme	RW	\$765	H	6.2	VH	H	VH	H	H	VH	H	H	M	M
23	R1968	RNC Baseline and Potential Study	RW	\$315	MH	5.4	MH	MH	VH	MH	MH	VH	H	H	L	M
24	R1965	HP / HPWH Baseline and Potential Assessment	RW	\$265	MH	5.3	H	M	VH	H	M	M	VH	H	MH	M
25	R1983	HES & IE Process and NTG Evaluation	LS	\$425	MH	5.3	VL	VH	VH	VH	MH	H	VH	VH	VL	M
26	R1963	Short Term Residential Lighting Analysis	RP	\$150	MH	5.2	MH	MH	MH	VH	M	MH	VH	MH	M	H
27	R1984	HES & IE Impact Evaluation	RW	\$300	MH	5.2	H	MH	H	MH	H	MH	M	M	M	M
28	R1960	SF Weatherization Assessment / Update	LS	\$650	MH	4.9	M	MH	H	MH	ML	H	VH	H	ML	MH
29	R1973	Retail Non-Lighting Products Impact and Process evaluation	RP	\$225	MH	4.7	H	MH	H	M	M	MH	H	L	ML	MH
30	R1959	SF Renovation and Additions Potential Analysis	RW	\$140	MH	4.6	MH	MH	VH	M	ML	MH	VH	ML	ML	M
31	R1969	Impact Evaluation / retention of behavioral program savings	LS	\$65	M	4.0	VH	L	H	H	VL	VL	MH	VH	VL	H
32	R1971	MF Impact evaluation (not recm - merged into X41)	NOT RECM		MH	4.6	MH	VL	H	MH	M	H	VH	MH	L	VL
33	R1980	WiFi Thermostats	NOT RECM		MH	4.5	H	MH	VH	ML	VL	H	H	MH	M	M
34	R1978	Residential NEI studies (Not Recm /merged into X42)	NOT RECM		M	4.3	H	H	VH	L	VL	VL	H	VH	VH	VH
35	R1961	TOU Rate Evaluation (Not recommended)	NOT REC	\$0	M	3.8	MH	M	H	ML	ML	M	M	ML	L	ML
36	R1981	Fuel Conversion Potential / Realization (not recommended)	NOT REC	\$0	M	3.7	L	L	H	M	VL	H	VH	VL	M	MH
37	R1976	Potential study - residential (Not recommended / in favor of targete	NOT REC	\$0	ML	3.4	VL	VL	H	H	VL	L	VH	H	VL	VH
38	R1962	Zero Energy Pilot Study (Not recommended)	NOT REC	\$0	ML	2.6	VL	M	H	L	VL	L	M	L	ML	ML

Next Steps

This document represents the Recommended “Three-Year 2019-21 Evaluation Budget and Plan”, for consideration and vote by the Evaluation Committee and the EEB in December 2018. The EA Team does not intend to exceed approved potential budget for the 2019-21 Three Year Plan as approved by the EEB. After budget approval, the EA team’s next task is the Mini-RFP process.