

Concord Municipal Light Board - January 13, 2021

Pursuant to a notice duly filed with the Town Clerk, a meeting of the Municipal Light Board was held on Wednesday January 13, 2021, at 7:30AM, via a Zoom Webinar. Present were Board Members: Wendy Rovelli, Gordon Brockway, Alice Kaufman (Chair), Pamela Hill and Brian Foulds. Also in attendance were David Wood, CMLP Director; Joe Repoff, CMLP Assistant Director; Laura Scott, CMLP Power Supply and Rates Administrator; Carole Hilton CMLP Customer Service Administrator, Jan Aceti, Energy Conservation Coordinator; Jason Bulger, Concord CIO; Karin Farrow, CMLP Admin; Matt Cummings, CMLP Financial Manager/Accountant; Greg Marcinek, Telecomm Director; Ray Andrews, Finance Committee liaison to the Light Board and residents Andy Puchrik, Pamela Dritt, Karlen Reed, Louise Berliner, David Allen, Jerry Frenkil, Alisha Boyajian, Jim Terry, Courtney Whalen, the Hires, a call-in listener and Mass Energize.

A video recording can be found here <https://youtu.be/ybbPdajLvY>. Time stamps are listed below.

Note definitions for acronyms used in these minutes:

AMI: Advanced metering infrastructure
CARES: Conservation and Renewable Energy Services
CMLP: Concord Municipal Light
CRC: Cooperative Resource Center
DOER: Department of Energy Resources
EV: Electric Vehicle
ENE: Energy New England
FENA: Federal Emergency Management Agency
GHG: Greenhouse Gas
MCAN: Massachusetts Climate Action Network
RCS: Residential Conservation Services
REC: Renewable Energy Credits
RFP: Request for Proposal
TOUR: Time of Use Rate
IOU: Investor-Owned Utility
MLP: Municipal Light Plant

CALL TO ORDER (00:01:00)

Ms. Kaufman called the meeting to order at 7:31 AM. The meeting recording will be posted to the Minuteman Media Website as soon as it is available. It was noted that the Zoom chat function would not be utilized.

Ms. Kaufman suggested it was time to elect a Light Board Clerk for the Light Board and asked for a volunteer.

Ms. Hill posed the question of actual need for the position, citing the time requirement needed to produce the minutes in the current extensive format when in fact the entire meeting is recorded and available for viewing in its entirety. It was decided in keeping with the open meeting requirements that the minutes could be limited to major points, votes and their outcomes. It was suggested that competent outside staff be utilized to shift the burden from the volunteer members of the Light Board.

Mr. Wood opined that the role of Clerk was important and should remain and explained that the minutes are drafted by CMLP and sent to the Board for review.

Ms. Hill agreed with Mr. Wood that the role was needed and that it was important for a Board member to be responsible for accuracy of the minutes.

Ms. Kaufman added the matter of the scope of minutes was not a new subject with each new Clerk having his or her own take on the level of detail to be included.

Mr. Brockway added that providing detailed minutes provides context for the decisions and actions was provided.

Ms. Hill added that it was good to hear that the duties of Clerk were not such that note taking would need to be so extensive that they were not able to fully participate in the meeting.

Mr. Foulds offered to become Clerk until the next town meeting.

Ms. Rovelli moved to appoint Mr. Foulds to the position. Mr. Brockway provided the second and with a unanimous roll vote, the motion was moved.

FUTURE MEETINGS and MINUTES (00:09:45)

February 10, 2021, March 10, 2021, April 14, 2021, May 12, 2021, June 9, 2021, July 14, 2021, August 11, 2021, September 8, 2021, October 13, 2021, November 10, 2021, December 8, 2021

There were no minutes available for review/approval.

DIRECTORS UPDATE (00:10:00)

Heat Pumps - After interviewing an impressive field of 8 candidates, Abode Energy Management has hired two part-time heat pump coaches on CMLP's behalf: Concord residents Geoff Titsch and Ethan Herberman. They will work up to 50 hours per month (combined) coaching Concord homeowners through the process of selecting among multiple heat pump options. Abode's Heat Pump Specialist is training them now. They will also spend some of their time working with CMLP staff to publicize the coaching service in the community.

Abode is now maintaining a list of Participating Air Source Heat Pump Contractors for our customers, who can request quotes from installers on the list knowing that they have a track record of success and customer satisfaction. Customers are not required to use the Participating Contractor List to receive CMLP's heat pump rebate. Abode is also managing a new quality assurance process for air source heat pump projects that receive our rebate, to improve heat pump sizing and installation. CMLP staff have revamped the air source heat pump rebate webpages to highlight the Contractor List and QA process, and plan to add information about the coaching service shortly. Our air source heat pump rebate program, which has been available to residential customers for several years, is now available to business customers as well.

Online Rebates - Working with Energy New England, CMLP staff have completed the transition to a new online rebate portal intended to make it easier for our customers to apply for rebates and for ENE and CMLP to process them. Our website now directs customers to the portal for LED, heat pump water heater, weatherization, air source heat pump and EV Level 2 rebate applications.

COVID-19 - In December, the Town purchased and built a temporary structure at the High School. The structure is going to be used as a vaccine clinic and a testing clinic. Therefore, CMLP staff had to shift gears and figure out how to get power to the structure by the end of December. Fortunately, staff were able to engineer and construct a line extension using some abandoned conduits that formerly fed the bus depot. Staff then added 4 poles and constructed the rest using overhead polls. The structure has been energized. the Town is following the state guidelines and the first vaccinations are being done tomorrow. The clinic will administer about 435 vaccines to First Responders from Concord and surrounding communities over the next few days. CMLP line workers do not qualify for vaccines until Phase II per State guidelines. The ~\$30,000 in costs to run the wiring for the clinic is being submitted to FEMA for reimbursement through the Fire Chief.

Ms. Rovelli pointed out that this facility would support not only Concord but surrounding towns as well.

Mr. Foulds commented how this is a good example of the benefits of having a MLP. The ability and flexibility to get things done without dealing with the bureaucracy of an IOU.

Mr. Wood agreed that this site would not be energized if Concord didn't have an MLP.

Cooperative Response Center - CRC our 3rd party call center for after hour's outages went live last week. Outages can be reported by calling (844) 723-1287 (a toll-free number), which will help alleviate the overload of calls to dispatch and the Light Plant during major events. There are Emergency situations when power needs to be shut down to address a bigger issue; Unfortunately, there is not always time nor an established effective method of notifying customers of the shutdown, as the focus is on making the repair. Hopefully, when the CMLP phone system is upgraded, it will be possible to re-route from our call center calls to CRC and alleviate the need for a different number to be called after hours.

Mr. Brockway suggested that the SmartHub might be a way of communicating outages with customers. Mr. Foulds suggested a bill insert or magnet with the new number along with the other Town emergency numbers (i.e., Broadband, Fire, Police etc.). The See Click Fix App for outages may be a possibility to which Mr. Wood pointed out that the App had not been used for reporting outages, but the CMLP website did have an outage map, which provides the area and number of customers affected. Mr. Foulds remarked that with AMI meters the system would be able identify meters that stop receiving and suggested that info be linked to the outage map. Mr. Wood said for privacy/security reasons outages at specific addresses are not publicly shared. Mr. Wood added, SmartHub outage reporting is nearing completion and customers will soon be able to report outages using SmartHub.

Acronyms/Definitions - On Friday a list was distributed of acronyms and definitions commonly used to Board Members. This document is lengthy and covers many areas. If the board or residents have any additions, please feel free to send them to CMLP, staff will update the document. (See Addendum A below)

Annual Report - CMLP staff are working on the annual report. CMLP staff will utilize the Zoom screen shot of the board for the picture.

Analog Metering Policy - CMLP staff was not able to finish the analog metering policy due to prioritizing the effort to provide power installation to the vaccine site as mentioned earlier. CMLP staff will have a policy for the Board to vote on at the February meeting along with information on pricing.

Mr. Foulds asked if staff had time to estimate the expenses related to offering analog meters such as calibration equipment, so the Board could establish good policy at the next meeting.

Mr. Wood said staff did not have the time.

Ms. Kaufman added that installation of analog meters would not take place until after a policy had been established.

Tree Trimming - Our crews have started tree trimming. Crews are focusing on areas north of Route 2 since the areas south of Route 2 were completed last year. CMLP Staff does not have a targeted completion date, which is normal when trimming with our own staff as crews get pulled off projects often.

Hybrid Bucket Truck - CMLP staff are in the process of putting together the specs for a new Hybrid bucket Truck that we plan to purchase in 2021. This new truck will replace Truck 11 (a 1992 International).

CARES - In the January bills, the CARES surcharge is still listed on the bill. This was an oversight, and it will be removed from the bills starting in February.

SMART METERS: RFP 416 AMI CONSULTANT UPDATE (00:31:15)

Six RFP proposals were received (Lemmerhirt, E Source, S.L. Serco, Weston Sampson, Power Systems Engineering & Vass Solutions) and one rejected (Katama Technologies) due to late receipt (due date

01/07/2021). These Proposals are being reviewed by CMLP staff. A review team will be meeting on 1/21/2021 to rank the non-price portion of the proposals. Pricing proposals will be opened at that time and the top 2-3 consultants will be interviewed the week of 01/25/2021. The next step will be to bring a recommendation to the Town Manager.

CMLP INCENTIVE PROGRAM – REVIEW & EVALUATION (00:35:05)

A review of what incentives are being offered: the uptake, outcome, effectiveness, impact on greenhouse gas emission reduction and what improvement may be warranted expected? to meet our targets was provided as an overview of the topic provided by Ms. Kaufman.

Ms. Aceti presented the following information. A spreadsheet comparison of the Strategic Plan target and adoption for each incentive and type. (See Addendum B below)

Air & Ground Source Heat Pumps – 2018, the year we had a Heat Smart campaign, had the highest adoption number. A drop in adoption occurred in 2020 due to the pandemic. With the addition of the dedicated Heat Pump coaches (mentioned in the director update), along with the extensive marketing plan, and a marketing tool kit developed by ENE designed to promote heat pumps and the Heat Pump coaches, an uptake is expected. There is also a full year’s worth of outreach activities planned.

Heat Pump Water Heaters - Not a lot of promotion has been completed on this. The Strategic Plan’s expected adoption targets are quite high. The consultant had used a “rule of thumb” calculation method that came from Mass Energy’s data indicating that the water heater heat pump adoption rate was about twice that of the Air & Ground Source Heat Pumps. Our adoption rate difference may be attributed to utilizing a different rebate structure. The goals were revised, and once the marketing for the Air & Ground Source Heat Pumps is established, we hope to focus on the Heat Pump Water Heaters. In future years, the goal is to increase the target numbers.

Electric Vehicles – The cumulative goals set by the consultant were Concord’s share (based on population) of State Goals. It is difficult to obtain real time accurate numbers as reporting lags and information on retirements of vehicles is annual.

- EV Miles Enrollment – Off peak charging goal. Target numbers are based on reaching a goal of having 95% percent of the in town EV’s charging off peak, once Opt-out TOU rates are rolled out. The EV Miles program is the interim solution to Time of Use Rates. In addition to the 2020 number of 150 enrolled there are 39 customers signed up for the optional opt-in time of use rate for EV Charging. For 2020 about 1/2 of the EV’s in town are on one of these off-peak charging programs.
- EV Level II Rebate – a \$250 rebate for installing a level 2 EV Charging station at your residence. There were no goals identified for this in the Strategic Plan. The 2021 forecast was based on the budgeting forecast for 2021.

Distributed Solar Initiative - The consultants had recommended a modest annual target increase. Due to community interest in keeping our rebate program and continuing to promote distributed solar, CMLP has added a MLP rebate program where we match funds provided by DOER. The MLP rebate program will be offered until the middle of 2021. The Modified CMLP Forecast was meant to be more reflective of what was going on. The sharp decline from 2018 to 2019 can be attributed to the 2018 ending of one program and the slow roll out of the MLP rebate program. Despite the pandemic, the 2020 modified goal was almost met.

Energy Efficiency Initiative - In the Strategic plan, the goal was developed and implement a comprehensive plan of energy efficiency initiatives that would mirror the comprehensiveness of the Mass Save program. CMLP

staff is not prepared to develop this plan, so cannot provide data on the energy efficiencies generated by our programs. For 2020, the following efficiency program data was reviewed. (See Addendum C below)

Residential Weatherization Rebates – Now open to all customers regardless of fuel usage. Chart shows Rebates paid with corresponding cost along with a 2021 Expenditure Forecast.

LED Bulb Rebates – Uptake on this program has been declining over the years as they have generally become more common in usage and LED installation has become part of the Home Energy Assessment. Home Energy Audit customers were offered bulb installation once pandemic restrictions are lifted, but many have declined. For most of 2020 Home Energy Audits were being done remotely. In 2019 there were over 2500 LED light bulbs installed.

Commercial Lighting Rebates – 2020 shows a drop from prior year (9-15) owing in part to the pandemic and the lack of promotion on the program in recent years.

Mr. Foulds asked if the reporting requirement of the RCS would be a good resource for pertinent info on the programs, to which Ms. Aceti responded that the questions being asked focus on the costs (administrative & marketing) of the programs. ENE does provide them information on numbers of Home Energy Audits performed with a breakdown of the assessments within the audit. ENE is being asked to tie rebates to the Energy Audit recommendations. A question was asked whether reviewing the information that ENE was providing DOER could help determine if the programs were warranted. The pandemic has limited the amount of marketing of the programs; as restrictions loosen, we hope to see a corresponding increase in participation. Recent annual spending on CARES related items is more than \$600K.

Mr. Brockway pointed out that the money spent on Renewable Energy (RECs or renewable energy contracts) could be seen as funds (2020 ~\$1.65M & 2021 ~\$3.3) spent on “greening” Concord.

Mr. Wood responded to a question from Ms. Rovelli stating that it was time for the Strategic Plan to be updated to show participation rates.

Mr. Foulds wanted to know if there had been any negative feedback on the programs, or barriers noted, that could be addressed to improve the execution of the programs. He has heard that the DOER shading restriction on solar installation had discouraged some people. Ms. Kaufman expressed concern that based on the actual experience, we will not scale the program to the level needed to achieve our long-term goals. Do CMLP staff have the right programs, is enough of an incentive being offered, are outside factors being considered, what is the return on our investment in terms of GHG emissions and sales?

Mr. Brockway suggested adding a question to the annual Town census on EVs to assist with counting.

Ms. Hill suggested that the questions posed by Ms. Kaufman warranted further discussion.

Mr. Foulds suggested that a good resource for evaluating the programs and their impact was a paper Ms. Aceti distributed in 2015 titled “Improving Concord Light’s Cost Effectiveness Screening Practices for Energy Efficiency Programs” (see Addendum D below)

Ms. Rovelli voiced a reminder that part of the Rate Setting process was to match rates to our costs and that the board needed to review the goals and initiatives outlined in the Strategic Plan. Are we on track and do we need to revisit the priorities or the initiatives?

LIGHT BOARD GOALS (01:10:30)

Ms. Kaufman referenced two documents that were key to the Light Board in developing a set of achievable goals for this year. Based on prior Board discussion, the Vision statement of the Strategic plan lacks direction for the Board.

Mr. Foulds, although not in disagreement with the vision statement, commented that the consultants vision statement was more of an industry standard vision, rather than one specific to Concord. He added that the core

goal of the Light Plant is to provide clean, low cost and reliable electricity, and these goals may conflict, so a vision statement expressing Concord's balance is needed. The Article 51 goal of being 100% non-emitting by 2030 is not reflected in the Vision Statement.

Ms. Hill agreed, with Mr. Foulds and, opined that the Strategic Plan Vision Statement is generic and needed to be revised to better reflect Concord.

Ms. Kaufman suggested that the revision could look more like "Together with our customers and partners CMLP will provide a stronger, more vibrant community that aligns with community climate, sustainability and resilience goals. Providing a clean, reliable, safe energy source at a fair cost."

Mr. Brockway voiced agreement with Mr. Foulds comments adding that acknowledging that the aspects of the goals can be in conflict and the key is managing the conflict.

Mr. Foulds opined that "low cost" should not be replaced by "fair cost". The need was to clean the energy source while keeping it low cost, which is necessary to improve scale. Mr. Foulds objected to the use of the word conflict, suggesting instead verbiage around the need for balance.

Mr. Wood remarked that clean energy comes at a cost and is not the lowest cost source available.

Ms. Rovelli opined that lowest cost was not the goal that "reasonable cost" would be more appropriate.

Mr. Wood added that Concord was doing more than most with GHG emission reduction and that the rates reflect that.

Ms. Hill suggested that a draft be established for review, as many good points had been suggested, and the subject be discussed further at the next meeting.

Ms. Kaufman agreed further conversation on the Vision Statement of the Strategic Plan was warranted.

Updating of the Vision Statements should be considered as one of the Light Board Goals.

Mr. Wood stated that the actual revision to the Strategic Plan was done internally at CMLP and then brought to the Board for review.

Ms. Rovelli, referencing a presentation given to the Climate Action Committee by Mr. Wood, suggested that identifying what role the Light Board plays in achieving those goals was important to identify.

Mr. Foulds would like to see the goals identified in the Climate Action plan (established after the Strategic Plan was written) in alignment with and incorporated into the Strategic Plan. Suggesting that the Solar Installation Memo from 2010 and the 2011 Renewable Energy Plan also needs to be updated and incorporated into the Strategic Plan.

Mr. Brockway opined that the Select Board Goals were a great starting point, and it would be useful to discuss how those broad goals trickle down and apply to the Light Board. Being a member of MCAN has been a beneficial resource he noted.

Recapping what had been said, Ms. Kaufman put forth that the updating of the Strategic Plan should be a goal along with determining what needs to be done to be in alignment with the select Board Goals. She charged the individual Board members with the task of reviewing the documents provided and submitting their recommendations for Light Board goals.

Ms. Rovelli suggested that the goals extend beyond the current year (current Board year ends in June 2021).

Some goals are multi-year goals, commented Mr. Foulds.

The Topic will be addressed at the next Light Board Meeting.

RATE CHANGE REVIEW (01:36:20)

Ms. Scott presented a slide (see Addendum F below) depicting the Board approved rate changes from 01/01/2017 thru 01/01/2021. Starting with an increase of \$.0125/kWh on 01/09/17. 2017 also saw an increase in the meter fee on 02/01/2017. The next change was a GS Net Metering Policy change on 03/01/2018 followed by the implementation of a Renewable Energy surcharge of \$.01/kWh on 09/01/2018. In 2019, a revenue neutral change was made as the meter charge was increased and the volumetric charges were lowered. There were no changes until 09/01/2020 when the Renewable Energy surcharge was increased by \$.0005/kWh. Most recently on 01/01/2021, the rates changed to the 2020 Cost of Service Study Rates. Going forward the two important things to consider are what the rate and rate structure will look like, as we move towards being able to

offer all our customers Time of Use Rates (implementation of Smart Meters). The Net Metering Policy will also need to be reviewed, as full retail credit for production may not continue to be financially viable.

How Time of Use affects net metering also needs to be considered? Is energy sent to the Light Plant during the day worth more?

Ms. Kaufman thanked Ms. Scott for the information and asked Board members and CMLP staff to share any relevant documents they came across so the Board could be as informed as possible when making these decisions.

Mr. Foulds who personally has two meters on his house (Solar & EV Charging) would like the TOU Rates to eliminate some of the incentive rates currently being offered, eliminating the rates designed for specific technology and shifting to rates designed to shift load. Offering to re-present the presentation, he gave in 2019 on Time of Use Rates to the Board.

Ms. Scott mentioned that, eliminating the incentive rates mentioned by Foulds might conflict with existing incentives, and eliminating incentive rates as Mr. Foulds suggests could be counter to achieving the Boards climate goals.

Ms. Kaufman asked that we hold discussion on rates for a later time.

LIAISON & PUBLIC COMMENTS (01:46:15)

Ms. Reed said she is glad to hear that the Strategic Plan is to be updated, and she is looking for a status update on reduction of Greenhouse Gas Emissions. Mr. Wood responded that that information is not readily available.

Mr. Allen expressed support for increase scale of solar. He requested clarification on the new Outage reporting number and asked if it would be possible for dual monitors to be allowed for viewing the meetings.

Ms. Dritt thanked the Board, opining that the board is focused on the important issues. She added that her hope was that the goals would include electrifying everything and to incentivize solar as increasing solar promotes a carbon free infrastructure which the Town doesn't pay for. Recognizing that cost will be higher in the beginning and then decline, goals should not focus on lowest cost but progressing toward cleaner energy. She proposed that a financial disincentive be imposed on those choosing to opt out of Time of Use Rates. Smart meters benefit the community as a whole. Regarding smart meters, existing technologies may inherently include, privacy and safety concerns, which may or may not be valid. If there will be a wired option, it will eliminate the safety concerns.

Ms. Rovelli moved to adjourn the meeting. Mr. Foulds provided the second and with a unanimous roll call vote the meeting was adjourned at 9:28 MA.

Respectfully submitted,
Brian Foulds, Clerk

Addendum A

DEFINITIONS AND ACRONYMS USED IN THE ELECTRIC UTILITY INDUSTRY AND AT CMLP BOARD MEETINGS

ABS: Accounting Business Solutions

ACCRUAL: The recording on the books of account, in a given period, of expenses or charges incurred and/or of income earned for the period, to reflect the matching of income and expenses to the fullest extent possible, independent of the dates on which settlements of such items are made.

ACCUMULATED PROVISION FOR DEPRECIATION AND AMORTIZATION: The net accumulated credit balance arising from provisions for depreciation and/or amortization of utility plant.

ADDITIONS (TO UTILITY PLANT)

- **GROSS:** Expenditures for construction (may or may not include Interest and/or Other Overheads Charged to Construction) and/or Utility Plant Purchased and Acquired - in a specific period.
- **NET:** Gross plant less accumulated depreciation of utility plant.

AG: Attorney General

AMI: Advanced Metering Infrastructure.

AMPERE: The unit of measurement of electric current. It is proportional to the quantity of electrons flowing through a conductor past a given point in one second. It is analogous to cubic feet of water flowing per second. It is the unit current produced in a circuit by one volt acting through a resistance of one ohm.

APPA: American Public Power Association

ASHP: Air Source Heat Pump

ASSETS (AND OTHER DEBITS): Items of value owned by or owed to a business. Represents either a property right or value acquired, or an expenditure made which has created a property right or is properly applicable to the future. Utility assets include Utility Plant, Other Property, and Investments, and Current and Accrued Assets.

AVERAGE NUMBER OF CUSTOMERS: The arithmetic averages of month-end customers in each of 12 consecutive months. For those billed other than every month, the number of such customers is adjusted to a 12-month basis (e.g., for bimonthly billing the number of customers billed, or counted, in each month is multiplied by two and the resultant averaged for the 12-month period).

BASE LOAD: The minimum load over a given time period.

BASE LOAD STATION: A generating station that is normally operated to take all or part of the base load of a system and which, consequently, operates essentially at a constant output.

BB: Broadband

BESS: Battery Energy Storage Solution

BONDS (SPECIFICALLY GENERAL OBLIGATION BONDS): A municipal bond backed solely by the credit and taxing power of the issuing jurisdiction rather than the revenue from a given project. General obligation bonds are issued with the belief that a municipality will be able to repay its debt obligation through taxation or revenue from projects. No assets are used as collateral.

BOOK COST: The amount at which assets are recorded in the accounts, which does not account for changes in market value.

BORDERLINE CUSTOMER: A customer located in the service area of an electric utility system and billed by such system but who is supplied with electric service from a neighboring utility system by appropriate arrangement between the two systems.

BTU (BRITISH THERMAL UNIT): The standard unit for measuring quantity of heat energy, such as the heat content of fuel. It is the amount of heat energy necessary to raise the temperature of one pound of water one degree Fahrenheit.

BUS: An electrical conductor that serves as a common connection for two or more electrical circuits. A bus may be in the form of rigid bars, either circular or rectangular in cross section, or in form of stranded-conductor overhead cables held under tension.

CAAB: Climate Action Advisory Board

CABLE MILES: The total length of separately sheathed cables, expressed in miles, regardless of the number of conductors contained in a single sheath. For pipe-type cables, it is the total single-conductor mileage.

CAPACITY FACTOR: The ratio of the average load on a machine or equipment for the period of time considered to the capacity rating of the machine or equipment.

CARES: Conservation and Renewable Energy Services

CCHS: Concord-Carlisle High School

CRC: Cooperative Response Center

CIO: Chief Information Officer.

CIRCUIT (ELECTRIC): A circuit is a conductor or a system of conductors through which an electric current flows or is intended to flow.

CIRCUIT MILES OF ELECTRIC LINE: The total length in miles of separate circuits (not including customer's services) whether 1, 2, 3, 4, or more conductors per circuit.

CLEARING ACCOUNTS: Accounts used for the accumulation of expenses that cannot be equitably distributed at the time of the charge. These accounts are cleared by distribution to other accounts based on past experience, benefits received, or on some other reasonable basis.

CLOCK HOUR: The 60-minute interval between any standard hour point on the clock and the following hour point, usually indicated by both hour points or by "Hour ended

CMLP: Concord Municipal Light Plant

CMS: Customer Messaging System

COMMERCIAL AND INDUSTRIAL: A customer, sales, and revenue classification covering energy supplied for commercial and industrial purposes, except that supplied under special contracts, agreements, or service classifications applicable only to municipalities, divisions, or agencies of Federal or state governments or to railroads and railways. Usually subdivided into Commercial and Industrial or into Small Light and Power and Large Light and Power. Most companies classify such customers as Commercial or Industrial using the Standard Industrial Classification or predominant kWh use as yardsticks; others still classify

COMPANY USE Kilowatt-hours used by an electric utility company in the operation of its business, exclusive of generating station use and energy lost and unaccounted for.

CONDUIT BANK A conduit bank is a length of one or more underground conduits or ducts (whether or not enclosed in concrete) designed to contain underground cables. A gallery or cable tunnel for power cables is generally treated as a conduit bank for property reporting purposes.

CONDUIT BANK MILES: Miles of conduit bank, regardless of number of conduits or ducts, of all sizes and types, and including manholes and hand holes.

CPS: Concord Public School

COS: Cost of Service; **COSS:** Cost of Service Study

CFD: Concord Fire Department

CPD: Concord Police Department

CPW: Concord Public Works

CRC: Cooperative Response Center

CSEC: Comprehensive Sustainability and Energy Committee

CSR: Customer Service Representative

CURRENT AND ACCRUED ASSETS: Generally, consists of items realizable, or to be consumed within one year from the date of the balance sheet. Can include Cash, Special Deposits, Working Funds, Temporary Cash Investments, Notes and Accounts Receivable, Materials and Supplies (including Fuel), Prepayments, and Other Current and Accrued Assets (receivables for interest, dividends, rents, etc.).

CURRENT AND ACCRUED LIABILITIES: Generally, consist of obligations due or payable within one year, which can include short-term borrowings and Long-Term Debt Due Within One Year, Accounts and Notes Payable, Customer Deposits, Taxes and Interest Accrued, and Other Current Accrued Liabilities (Dividends Declared, Matured Long-Term Debt and Interest, etc.).

Short-Term Debt (with an original maturity of less than one year) which will be refinanced by Long-Term Debt is sometimes included in Capitalization.

CURRENT MATURITIES: Securities or that part of an issue (usually debt) that will be due and payable within one year from the balance sheet date. For balance sheet presentation, they are usually included in Current and Accrued Liabilities.

CUSTOMER ADVANCES FOR CONSTRUCTION: A deferred credit account representing cash advances paid to the utility by customers requiring the construction of facilities in their behalf. These advances are refundable -- the time or extent of refund is dependent on the contract provisions of the advance (usually dependent on whether or not during a specified period the revenue from the installation warrants the refund). Not to be confused with **CONTRIBUTIONS IN AID OF CONSTRUCTION** (defined herein).

CYCLE: In one cycle of alternating electric current, the current goes from zero potential or voltage to a maximum in one direction, back to zero, then to a maximum in the other direction and then back again to zero. The number of such complete cycles made each second determines the frequency of the current. (Direct current does not fluctuate from positive to negative and hence cycles or frequency can apply only to alternating current.)

DCFC: Direct Current Fast Charger

DEBENTURES: Certificates of indebtedness issued under an indenture agreement (administered by a trustee) representing long-term borrowings of capital funds, secured only by the general credit of the issuing corporation

DECLINING BLOCK RATE: A rate that prices successive blocks of electricity consumed at lower per-unit prices.

DEED: Demonstration of Energy Developments (part of APPA R&D program)

DEFERRED INFLOWS OF RESOURCES: Accounts carried on the liability side of the balance sheet in which are recorded items being amortized as credits to income over a period of time (such as Unamortized Premium on Debt and Accumulated Deferred Investment Tax Credits) and items held in suspense pending final transfer or disposition (such as Customer Advances for Construction, etc.).

DEFERRED OUTFLOWS OF RESOURCES: Accounts carried on the asset side of the balance sheet in which are recorded items being amortized as charges against income over a period of time (such as Unamortized Debt Discount and Expense) and items held in suspense pending final transfer or disposition (such as Extraordinary Property Losses, Clearing Accounts (net debits or credits), etc.).

DEGREE-DAY: A unit measuring the extent to which the outdoor mean (average of maximum and minimum) daily dry-bulb temperature falls below (in the case of heating) or rises above (in the case of cooling) an assumed base. The base is normally taken as 65 for heating and for cooling unless otherwise designated. One degree-day is counted for each degree of deficiency below (for heating) or excess over (for cooling) the assumed base, for each calendar day on which such deficiency or excess occurs.

DEMAND: The rate at which electric energy is delivered to or by a system, part of a system, or a piece of equipment expressed in kilowatts, kilovolt amperes or other suitable unit at a given instant or averaged over any designated period of time. The primary source of "Demand" is the power-consuming equipment of the customers. See LOAD.

- **ANNUAL MAXIMUM:** The greatest of all demands of the load under consideration that occurred during a prescribed demand interval in a calendar year.
- **ANNUAL SYSTEM MAXIMUM:** The greatest demand on an electric system during a prescribed demand interval in a calendar year.
- **AVERAGE:** The demand on, or the power output of, an electric system or any of its parts over any interval of time, as determined by dividing the total number of kilowatt-hours by the number of units of time in the interval.

- **BILLING:** The demand upon which billing to a customer is based, as specified in a rate schedule or contract. It may be based on the contract year, a contract minimum, or a previous maximum therefore, does not necessarily coincide with the actual measured demand of the billing period.
- **COINCIDENT:** The sum of two or more demands that occur in the same demand interval.
- **INSTANTANEOUS PEAK:** The maximum demand at the instant of greatest load, usually determined from the readings of indicating or graphic meters.
- **INTEGRATED:** The demand usually determined by an integrating demand meter or by the integration of a load curve. It is the summation of the continuously varying instantaneous demands during a specified demand interval.
- **MAXIMUM:** The greatest of all demands of the load under consideration that has occurred during a specified period of time.
- **NON-COINCIDENT:** The sum of two or more individual demands, which do not occur in the same demand interval. Meaningful only when considering demands within a limited period of time, such as a day, week, month, a heating or cooling season, and usually for not more than one year.

DEMAND CHARGE The specified charge to be billed based on the billing demand, under an applicable rate schedule or contract.

DEMAND FACTOR: The ratio of the maximum demand over a specified time period to the total connected load on any defined system.

DEMAND INTERVAL: The period of time during which the electric energy flow is averaged in determining demand, such as 60-minute, 30-minute, 15-minute, or instantaneous.

DEPRECIABLE PLANT: Usually tangible plant in service that is subject to depreciation, depletion, or amortization.

DEPRECIATION (PROVISION FOR): Charges made against income to provide for distributing the cost of depreciable plant less estimated net salvage over the estimated useful life of the asset in such a way as to allocate it as equitably as possible to the period during which services are obtained from the use of facilities. Among the factors to consider are wear and tear, decay, inadequacy, obsolescence, changes in demand, and requirements of public authorities.

DERM: Distributed Energy Resource Management

DIVERSITY: That characteristic of variety of electric loads whereby individual maximum demands usually occur at different times. Diversity among customer's loads results in diversity among the loads of distribution transformers, feeders, and substations, as well as between entire systems. See **LOAD DIVERSITY**.

DIVERSITY FACTOR: The ratio of the sum of the non-coincident maximum demands of two or more loads to their coincident maximum demand for the same period.

DOER: Department of Energy Resources

DOR: Department of Revenue

DPLM: Department of Land Management

DPU: Department of Public Utilities

EFTF: Energy Forward Task Force

ENE: Energy New England

EMF: Electromagnetic Frequency

EMR: Electromagnetic radiation

ENERGY ACCOUNTED FOR BUT NOT SOLD: This includes kilowatt-hours used by the company in its electric and other departments, but not included in "sales", plus that furnished to others without charge.

ENERGY CHARGE: That portion of the billed charge for electric service based upon the electric energy (kilowatt-hours) supplied, as contrasted with the demand charge.

ENERGY LOST AND UNACCOUNTED FOR The difference between total net system input in kilowatt-hours and the sum of kilowatt-hour sales and kilowatt-hours accounted for but not sold.

ETS: Electric Thermal Storage

EV: Electric Vehicle

FEEDER An electric line for supplying electric energy within an electric service area or sub- area.

FERC: Federal Energy Regulatory Commission

FIRM OBLIGATION: A commitment to supply electric energy or to make capability available at any time specified during the period covered by the commitment.

FIXED CHARGES: When used in connection with income statements, this term is usually synonymous with Interest Charges (defined herein). A concept, initiated by the Securities and Exchange Commission, includes in fixed charges one-third of significant rentals. When used in its broader sense - particularly in cost studies - this

FUNCTIONAL ACCOUNTS: Groupings of plant and expense accounts according to the specified function or part they play in the rendition of utility service.

OPERATION AND MAINTENANCE FUNCTIONAL EXPENSE ACCOUNTS: Includes Power Production, Transmission, Distribution, Customer Accounts, Sales, and Administrative and General Expenses.

G-1: Small General Service Rate – (the Customer's maximum metered demand is less than 20.0 kW.)

G-2: Medium General Service Rate – (Customer's maximum metered demand is equal to or greater than 20 kW for any two months during any twelve-month period.)

G-3: Large General Service Rate – (Customer's maximum metered on-peak kilowatt demand is equal to or greater than 200 kW at a single metered location.)

GASB: Government Accounting Standards Board

GENERAL PLANT: A group of utility plant accounts not includable in the other functional utility plant accounts. Includes: Land and Land Rights, Structures and Improvements, Office Furniture and Equipment, Transportation, Equipment, Stores Equipment, Tools, Shop and Garage Equipment, Laboratory Equipment, Power Operated Equipment, Communication Equipment, Miscellaneous Equipment, and Other Tangible Property.

GHG: Greenhouse Gases

GSHP: Ground Source Heat Pump

HEA: Home Energy Assessment

HEAT PUMP A year-round air-conditioning system employing refrigeration equipment in a manner that enables usable heat to be supplied to a space during the winter period and by reversing the operation cycle to abstract heat from the same space during the summer period. When operating as a heating system, heat is absorbed from an outside medium (either air, water, or the earth) and this heat together with the heat equivalent of the work of compression is supplied to the space to be heated. When operating on the cooling cycle, heat is absorbed from the space to be cooled and this heat together with the heat equivalent of the work of compression is rejected to the outside medium.

HPWH: Heat Pump Water Heater

HEAT RATE A measure of generating station thermal efficiency, generally expressed in Btu per net kilowatt-hour. It is computed by dividing the total Btu content of fuel burned for electric generation by the resulting net kilowatt-hour generation.

HVAC: Heating, Ventilation & Air Conditioning

INCLINING BLOCK RATE: A rate that prices successive blocks of electricity consumed at higher per-unit prices.

IOS: International Organization for Standardization

ISO-NE: Independent System Operator of New England

IOU: Investor-Owned Utilities

KILOVAR (KVAR): 1,000 reactive volt-amperes. See POWER (ELECTRIC), REACTIVE.

KILOVOLT (KV): 1,000 volts (defined herein).

KILOVOLT AMPERE (KVA): 1,000 volt-amperes (defined herein).

KILOWATT (KW): 1,000 watts (defined herein).

KILOWATTHOUR (kWh): The basic unit of electric energy equal to one kilowatt of power supplied to or taken from an electric circuit steadily for one hour.

LIABILITIES AND OTHER CREDITS: Amounts recorded in books of account that represent obligations to creditors, items deferred or in suspense, and the equity of shareowners. Includes Capitalization, (Long-Term Debt and Proprietary Capital), Current and Accrued Liabilities, Operating Reserves, Contributions in Aid of Construction and Accumulated Deferred Taxes on Income.

LOAD: The amount of electric power delivered or required at any specified point or points on a system. Load originates primarily at the power consuming equipment of the customers.

LOAD CURVE: A curve on a chart showing power (kilowatts) supplied, plotted against time of occurrence, and illustrating the varying magnitude of the load during the period covered.

LOAD DIVERSITY: The difference between the sum of the maxima of two or more individual loads and the coincident or combined maximum load, usually measured in kilowatts.

LOAD FACTOR: The ratio of the average load in kilowatts supplied during a designated period to the peak or maximum load in kilowatts occurring in that period. Load factor, in percent, also may be derived by multiplying the kilowatt-hours in the period by 100 and dividing by the product of the maximum demand in kilowatts and the number of hours in the period.

LONG-TERM DEBT: Includes outstanding bonds, debentures, advances from associated companies, and notes that are due one year or more from date of issuance. The portion of such securities (inclusive of sinking fund requirements) that is due within one year from the date of the balance sheet is usually included in Current and Accrued Liabilities, but Long-Term Debt to be refinanced within one year should continue to be reported under Long-Term Debt.

LOSS (LOSSES): The general term applied to energy (kilowatt-hours) and power (kilowatt) lost in the operation of an electric system. Losses occur principally as energy transformations from kilowatt-hours to waste heat in electrical conductors and apparatus.

- **AVERAGE:** The total difference in energy input and output or power input and output (due to losses) averaged over a time interval and expressed either in physical quantities or as a percentage of total input.
- **ENERGY:** The kilowatt-hours lost in the operation of an electric system.
- **LINE:** Kilowatt-hours and kilowatts lost in transmission and distribution lines under specified conditions.
- **PEAK PERCENT:** The difference between the power input and output, as a result of losses due to the transfer of power between two or more points on a system at the time of maximum load, divided by the power input.
- **SYSTEM:** The difference between the system net energy or power input and output, resulting from characteristic losses and unaccounted for between the sources of supply and the metering points of delivery on a system.

MCAN: Mass Climate Action Network

MLP: Municipal Light Plant

MM: Million

MMWEC: Massachusetts Municipal Wholesale Electric Company

MTC: Mass Tax Connect

MWh: Megawatt hour

MUD: Multiple Unit Dwellings; **MDU:** Multiple Dwelling Unit

NEEP: Northeast Energy Efficiency Partnerships

NEPOOL: New England Power Pool

NEPPA: Northeast Public Power Association

NISC: National Information Solutions Cooperative provides the Accounting, Customer Information System, and **Outage Management** software for CMLP.

NRC: National Resource Commission

NYP&A: New York Power Authority

OMS: Outage Management System

OPEB: Other Post-Employment Benefits

OPERATING EXPENSES: A group of expenses applicable to utility operations composed of: Operation Expense, Maintenance Expense, Provisions for Depreciation and Amortization, Taxes Other Than Income Taxes, Income Taxes, Provision for Deferred Income Taxes, Income Taxes Deferred in Prior Years - Credit, and Investment Tax Credit Adjustments - Net.

OPERATING RATIO: The ratio, generally expressed as a percentage, of Operating Expenses to Operating Revenues. This may be for total operations, or for a single departmental operation, such as electric or gas. (In special variations, the numerator may be defined as exclusive of depreciation or taxes, or both.)

PCA: Power Cost Adjustment

PILOT: Payment in Lieu of Taxes

POLE MILES (OF LINE): Miles measured along the line of poles, structures, or towers carrying electric conductors regardless of the number of conductors or circuits carried. For underground lines, see CONDUIT BANK MILES.

POWER (ELECTRIC): The time rate of generating, transferring or using electric energy, usually expressed in kilowatts.

- **APPARENT:** Apparent power is proportional to the mathematical product of the volts and amperes of a circuit. This product generally is divided by 1,000 and designated in kilovolt amperes (kVA). It is comprised of both real and reactive power.
- **FIRM:** Power or power-producing capacity intended to be available at all times during the period covered by a commitment, even under adverse conditions.
- **INTERRUPTIBLE:** Power made available under agreements that permit curtailment or cessation of delivery by the supplier.
- **NON-FIRM:** Power or power-producing capacity supplied or available under an arrangement that does not have the guaranteed continuous availability feature of firm power.
- **REACTIVE:** The portion of "Apparent Power" that does no work. It is commercially measured in kilovars. Reactive power must be supplied to most types of magnetic equipment, such as motors. It is supplied by generators or by electrostatic equipment, such as capacitors.
- **REAL:** This is the energy or work-producing part of "Apparent Power." It is the rate of supply of energy, measured commercially in kilowatts. The product of real power and length of time is energy, measured by watt-hour meters and expressed in kilowatt-hours.

POWER FACTOR: Power factor is the ratio of real power (kW) to apparent power (kVA) for any given load and time. Generally, it is expressed as a percentage ratio.

POWER POOL: A power pool is two or more interconnected electric systems planned and operated to supply power in the most reliable and economical manner for their combined load requirements and maintenance program.

PP: Power Purchase

PPA: Power Purchase Agreement

PPE: Personal Protective Equipment

PROVISION FOR RATE REFUND: The asset or liability accrued on the Balance Sheet to account for the difference between the amount of revenue collected in rates for purchased power and actual expenses paid for purchased power.

RATE BASE: The value established by a regulatory authority, upon which a utility is permitted to earn a specified rate of return. Generally, this represents the amount of property used and useful in public service and may be based on the following values or combinations thereof: fair value, prudent investment, reproduction cost, or original cost; and may provide for the inclusion of cash working capital, materials and supplies, and deductions for: Accumulated Provision for Depreciation, Contributions in Aid of Construction, Customer Advances for Construction, and Accumulated Deferred Income Taxes and Accumulated Deferred Investment Tax Credits.

RATE OF RETURN: The ratio of allowed Operating Income to a specified rate base, expressed as a percentage.

DEMAND RATES: Any method of charge for electric service that is based upon, or is a function of the rate of use, or size, of the customer's installation or maximum demand (expressed in kilowatts, kilovolt amperes, or horsepower) during a given period of time.

R-1: Residential Rate

REC: Renewable Energy Credit

RCS: Residential Conservation Service

REGI: Renewable Energy Group

RESERVE: The net accumulated balance reflecting reservations of Income or Net Position to provide for a reduction in the value of an asset, for a contingent liability or loss, or for other special purposes.

RESIDENTIAL: A customer, sales, and revenue classification covering electric energy supplied for residential (household) purposes. The classification of an individual customer's account where the use is both residential and commercial is based on principal use.

RF: Radio Frequency

RFP: Request for Proposal

RFQ: Request for Qualifications

RGGI: Regional Greenhouse Gas Initiative

ROR: Rate of Return

RORB: Return on Rate Base

SERVICE, CUSTOMER'S: That portion of conductors usually between the last pole or manhole and the premises of the customer served.

SHORT-TERM DEBT: Notes, drafts, acceptances, commercial paper, or other similar evidence of indebtedness payable on demand or which by their terms are payable within one year from the date of issuance.

SINKING FUND: Cash or other assets, and the interest or other income earned thereon, set apart for the retirement of a debt, the redemption of a stock, or the protection of an investment in depreciable property.

SMARTHUB: SmartHub is the self-service Web portal and mobile app for customers to access their utilities account information and other services such as managing their account information, monitoring usage, making a payment, and viewing billing history.

STANDARD INDUSTRIAL CLASSIFICATION (SIC): A manual published by the United States Government that provides a system for use, in the classification of establishments, by type of activity in which engaged, for purposes of facilitating the collection, tabulation, presentation, and analysis of data relating to establishments, and for promoting uniformity and comparability in the presentation of statistical data collected by various agencies of the United States Government, state agencies, trade associations, and private research organizations.

Statistics on kWh sales to, and revenues from, SIC coded industrial customers are gathered by most electric utility companies.

STANDBY SERVICE: Service that is not normally used but which is available through a permanent connection in lieu of, or as a supplement to, the usual source of supply.

SUBSTATION: A substation is an assemblage of equipment for the purpose of switching and/or changing or regulating the voltage of electricity. Service equipment, line transformer installations, or minor distribution or transmission equipment are not classified as substations.

STEP-DOWN: A step-down substation is used to change electricity from a higher to a lower voltage.

STEP-UP: A step-up substation is used to change electricity from a lower to a higher voltage.

SUMMER PEAK: The greatest load on an electric system during any prescribed demand interval in the summer (or cooling) season, usually between June 1 and September 30.

SWITCHING STATION: An assemblage of equipment for the sole purpose of tying together two or more electric circuits through switches selectively arranged to permit a circuit to be disconnected, as in case of trouble, or to change the electric connections between the circuits. A type of substation.

TM: Town Manager

TMO: Town Manager's Office

TOUR: Time of Use Rate

UNBILLED REVENUES: Revenues applicable to electric energy consumed but not yet billed to the customer because of bimonthly or cycle billing, or for other reasons. A few companies estimate the amount of unbilled revenue at the year-end and at that time adjust their operating revenue to reflect the difference between the amount of unbilled revenue at the beginning and end of the year.

UNCLASSIFIED UTILITY PLANT: Refers to that portion of Utility Plant that has not been classified or distributed on the basis of Original Cost.

UTILITY PLANT: Includes Plant: In Service, Purchased or Sold, In Process of Reclassification, Leased to Others, Held for Future Use, Completed Construction Not Classified, Construction Work in Progress, Plant Acquisition Adjustments, Other Electric Plant Adjustments, and Other Utility Plant. The Uniform System of Accounts prescribes for the deduction of Accumulated Provision for Depreciation and Amortization.

UTILITY PLANT IN SERVICE: That portion of a utility's plant that is devoted to the operations of the company. Excludes plant: purchased or sold, in process of reclassification, leased to others, held for future use, under construction, and acquisition adjustments and adjustment accounts, and without deduction of Accumulated Provision for Depreciation and Amortization.

UTILITY RATE STRUCTURE: A utility's approved schedules of charges for billing utility service rendered to various classes of its customers.

UTILIZATION FACTOR: The ratio of the maximum demand of a system or part of a system, to the rated capacity of the system or part of the system, under consideration.

VOLT: The unit of electromotive force or electric pressure analogous to water pressure in pounds per square inch. It is the electromotive force that, if steadily applied to a circuit having a resistance of one ohm, will produce a current of one ampere.

VOLTAGE OF A CIRCUIT: The voltage of a circuit in an electric system is the electric pressure of that circuit measured in volts. It is generally a nominal rating based on the maximum normal effective difference of potential between any two conductors of the circuit.

VPN: Virtual Private Network

VRF: Variable Refrigerant Flow. A type of air source heat pump technology, typically used in commercial settings.

WATT: The electrical unit of power or rate of doing work. The rate of energy transfer equivalent to one ampere flowing under a pressure of one volt at unity power factor. It is analogous to horsepower or foot-pounds per minute of mechanical power. One horsepower is equivalent to approximately 746 watts.

Addendum B

Comparison of CMLP Strategic Plan Initiative Targets and Actual Adoption

Fuel Switching Initiative

Year	2013 - 2018	2018	2019	2020	2021	2022	2023	2024	2025
Air & Ground Source Heat Pumps									
Annual Strategic Plan Installation Target Number		0	46	68	89	111	132	153	174
Modified CMLP Forecast					60	n/a	n/a	n/a	n/a
Actual Annual Installation Number	52	59	52	38					

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025
Heat Pump Water Heaters									
Annual Strategic Plan Installation Target Number		0	100	146	193	239	285	331	378
Modified CMLP Forecast		90	24	8	9	n/a	n/a	n/a	n/a
Actual Annual Installation Number	1	6	4	8					

Electric Vehicle Initiative

Year	2018	2019	2020	2021	2022	2023	2024	2025
Electric Vehicles								
Cumulative Strategic Plan Adoption Target Number	277	444	681	1023	1528	2283	3424	5159
Actual Cumulative Adoption Number	315	425	453					

The 2019 cumulative actual adoption figure includes some data through "Commitment Period 2" in 2020. There are 8 to 12 Commitment Periods per year for which the Assessors office receives VIN data from the state DMV. The 2020 cumulative actual adoption figure includes data through Commitment Period 4, and is therefore preliminary. Further, Commitment Period data does not include vehicle retirements. Those are accounted for in a data file provided at the beginning of each calendar year for the previous year.

Year	2018	2019	2020	2021	2022	2023	2024	2025
EV Miles Enrollment								
Cumulative Strategic Plan Target Number*	299	404	430	n/a	n/a	n/a	n/a	n/a
Actual Cumulative Enrollment in EV Miles**	40	101	150***					

*If opt-out TOU rates are in place, the strategic plan assumes that 95% of charging will be done off peak. We use 95% of the cumulative actual adoption number as a proxy target.

** We use the EV Miles Program as a proxy for the TOU rate at this time.

*** Note that this figure is just EV Miles Enrollment. The 189 figure on the Year-to-Date tab for "EV Miles + TOU Enrollees" includes customers who have signed up for the opt-in TOU rate for car charging.

Year	2018	2019	2020	2021	2022	2023	2024	2025
EV Level 2 Rebates								
Actual Annual Installation Number	5*	38	21					

* Program began in September 2018

Distributed Solar Initiative

Year	2008-2017	2018	2019	2020	2021	2022	2023	2024	2025
Distributed Solar									
Annual Strategic Plan Installation Target Number		10	10	10	10	10	0	0	0
Modified CMLP Forecast		21	38	27	30	n/a	n/a	n/a	n/a
Actual Annual Installation Number	315	28	9	24					

Energy Efficiency Initiative

The Energy Efficiency Strategic Plan Initiative called for programs to be established that would result in 1% reduction in residential, G1 and G2 sales and 0.5% reduction in G3 sales in Program Year 1, increasing by 0.1% each year. These programs have not yet been launched. The Year-to-Date uptake for the energy efficiency rebate programs we do have is shown on the Year-to-Date tab.

Addendum C

Energy Efficiency						
Residential Weatherization Rebates Paid	2020 Weatherization Forecast	% of 2020 Forecast Reached	% of Annual Days Passed	2020 Expenditure Forecast	Spent to Date	2021 Expenditure Forecast
8	27	30%	100%	\$25,000	\$5,834	\$6,683
LED Bulb Rebates Paid	2020 LED Rebate Forecast	% of 2020 Forecast Reached	% of Annual Days Passed	2020 Expenditure Forecast	Spent to Date	2021 Expenditure Forecast
21 (for total of 342 bulbs)	n/a	n/a	100%	\$1,200	\$743	\$851
LED Bulbs Installed During Audits	2020 LED Rebate Forecast	% of 2020 Forecast Reached	% of Annual Days Passed	Expenditure Forecast	Spent to Date**	2021 Expenditure Forecast
455	n/a	n/a	100%	\$34,950	\$6,465	\$6,190
installations. Audit customers were offered bulb installation once pandemic restrictions are lifted, but many have declined.						
Commercial Lighting Rebates Paid	2020 LED Rebate Forecast	% of 2020 Forecast Reached	% of Annual Days Passed	Expenditure Forecast	Spent to Date	2021 Expenditure Forecast
3	n/a	n/a	100%	\$67,000	\$28,820	\$33,012

Addendum D

Improving Concord Light's Cost Effectiveness Screening Practices for Energy Efficiency Programs

Historical Practices

Going back to at least 2008, Concord Light has been using a particular methodology to determine whether providing rebates to our customers is justified when they implement energy efficiency or renewable energy measures. To date, the methodology has been used in the design of rebate programs for energy efficient central air conditioning equipment, solar PV and high efficiency commercial lighting.

These measures reduce peak demand as well as consumption. When our customers reduce peak demand, Concord Light saves money on transmission and forward capacity market costs. We also postpone the carrying costs of upgrading our substation capacity. The methodology Concord Light has used involves estimating what these cost savings will be into the future, bundling up ten years-worth of savings and providing the bundle to the customer up front in the form of a rebate.

One of the primary purposes for which the methodology was developed was to avoid cross- subsidization. That is, to determine if Concord Light would experience sufficient savings due to implementation of an energy efficiency measure to fund a worthwhile rebate out of the future savings, rather than having to fund it from revenue collected from other rate payers.

Rationale for Change

In the spring of 2015, Concord Light staff took a new look at the methodology and at the policy of avoiding cross subsidization. We concluded that there are good reasons to offer energy efficiency rebate programs to our customers, even if there is some cross subsidization involved.

Reason #1. The regulations that we operate under permit small amounts of cross subsidization among ratepayer groups. Concord Light already allows some cross subsidization in its territory. Our low-income assistance rate is one example.

Reason # 2. The amount of cross subsidization that would result from our energy efficiency programs is likely to be quite modest. By way of illustration, an article published in Public Utilities Fortnightly in October 2014 indicated that the Vermont Department of Public Service had recently commissioned a study of the rate and bill impacts of its Long-Term Energy Efficiency Plan, which calls for "continued aggressive efficiency programs with annual savings of approximately 1.5% of retail electricity sales for the next 20 years."

While reducing electricity consumption by 1.5% of retail sales annually is aggressive, it is not pie in the sky. The same article notes that EPA has found that 12 leading states have achieved, or will achieve with existing requirements, annual incremental savings rates of at least 1.5% of retail electricity sales. Massachusetts achieved a savings rate of 1.5% of retail electricity sales or greater starting in 2010.

By way of comparison, participants in Concord Light's energy efficiency programs saved 423,000 kwh in 2014, equivalent to 0.37% of our retail electricity sales in that year. We have some room to grow as we pursue the energy efficiency leaders.

The study commissioned by the Vermont Department of Public Service found that the long-term average rate impacts for the 20-year plan are likely to be relatively modest. "Over the long term, meaning the 20-year period of the plan, plus the time period for which savings and benefits attributed to the efficiency programs will be experienced, the plan results in a roughly 0.5% increase in rates for business customers with a demand charge, a

roughly 1% increase in rates for business customers without demand charges; and less than a 3% increase in rates for residential customers."

These findings support indicate that the amount of cross subsidization that would result from our energy efficiency programs is likely to be quite modest, even if we achieve the aggressive savings rates that we hope to.

Reason #3. Almost 60% of the customers who responded to our residential customer survey in 2011 indicated that they felt that Concord Light should prioritize environmental protection equally with providing affordable and reliable electric service.

Reason #4. Concord Light enjoys the privileges that come from being a monopoly. One of our values is that along with those privileges, we have a responsibility to serve the public interest. There is a public interest imperative to protect our current and future customers from the profound consequences of climate change. Concord Light is in position to do something about that, and we believe that we should.

Adopting Improved Cost-Effectiveness Screening Practices

If preventing cross subsidization is not our primary purpose, how do we determine if an energy efficiency program is in our customers' best interests or not?

Utilities use a variety of cost effectiveness tests to determine if the benefits of an energy efficiency program outweigh its costs. The table (on the next page) displays three categories of cost and benefits that can be attributed to an energy efficiency program: Utility costs and benefits, participant costs and benefits and public costs and benefits.

To test cost effectiveness, the benefits and the costs are monetized. The benefits are summed and form the numerator of the benefit cost ratio. The costs are summed in the denominator of the benefit cost ratio. If the benefit to cost ratio is greater than 1, the program is considered cost effective, and has cleared a hurdle towards implementation. If the benefit to cost ratio is less than 1, the program is not considered cost effective and is typically not implemented.

The cost effectiveness test most commonly used in states in the U.S. is the Total Resource Cost Test {TRC}. The TRC attempts to include the costs and benefits in all three categories in the benefit-to-cost ratio calculation. When one looks online for information about the TRC, one finds information about how it is applied in different states - and different states do apply it differently. One also finds some emphatic criticisms of the TRC. One of them is that it is excruciating complex and time consuming to administer. When one thinks about trying to quantify all the items in the three cost/benefit categories, especially the ones that do not easily lend themselves to monetization, one can begin to imagine why that criticism is leveled. Because of our small staff at Concord Light, we feel this is a consideration we should keep in mind when deciding which cost effectiveness test, we will use.

Another criticism of the TRC is that it is inherently disadvantageous to energy efficiency programs. The reason is that the costs are often much easier to quantify than the benefits. Utilities will tend to leave out benefits that are very difficult to monetize. As a result, the denominator of the benefit-cost ratio is more likely to be fully populated, while the numerator is more likely to be under populated. A fully populated denominator and an under populated numerator is more likely to lead to a benefit-cost ratio that is less than one.

Critics of the TRC argue that the inconsistencies between how fully the benefits and costs are represented in the benefit-cost ratio tend to be particularly acute in the Participant Cost/Benefit category. Concord Light's High Efficiency Commercial Lighting Rebate Program serves as an example of this. It is easy for Concord Light to quantify participant costs, because we require businesses to tell us how much their lighting upgrade is going to cost when they apply for a rebate.

FIG. 2

TEMPLATE – THE RESOURCE VALUE FRAMEWORK

An illustrative list of costs and benefits that states should consider in meeting energy policy goals.

Program Name:		Date:	
1. Key Assumptions, Parameters and Summary of Results			
Analysis Level	<input type="checkbox"/> Program		
	<input type="checkbox"/> Portfolio		
Measure Life		Discount Rate	
Projected Annual Savings		Projected Lifetime Utility Savings	
2. Monetized Utility Costs		Monetized Utility Benefits	
Program Administration		Avoided Energy Costs	
Incentives Paid to Participants		Avoided Capacity Costs	
Shareholder Incentive		Avoided T&D Costs	
Other Utility Costs		Wholesale Market Price Suppression	
		Avoided Environmental Compliance Costs	
		Other Utility System Benefits	
NPV Total Utility Cost		NPV Total Utility Benefits	
3. Monetized Participant Costs		Monetized Participant Benefits	
Participant Contribution		Participants' Savings of Other Fuels	
Participant's Increased O&M Costs		Participant Non-Energy Benefits:	
Other Participant Costs		Participants' Water and Sewer Savings	
		Participants' Reduced O&M Costs	
		Participants' Health Impacts	
		Participant Employee Productivity	
		Participant Comfort	
		Additional Low-Income Participant Benefits	
		Other Participant Non-Energy Benefits	
NPV Total Participant Cost		NPV Total Participant Benefits	
4. Monetized Public Costs		Monetized Public Benefits	
Public Costs		Public Benefits of Low Income Programs	
		Reduced Environmental Impacts (if monetized)	
		Public Fuel and Water Savings	
		Reduced Public Health Care Costs	
		Other Public Benefits	
NPV Total Public Costs		NPV Total Public Benefits	
Total Monetized Costs and Benefits			
Total Costs		Total Benefits	
Benefit- Cost Ratio		Net Benefits	
5. Non-Monetized Public Costs and Benefits			
Non-Monetized Benefits		Comments	
Promotion of Customer Equity			
Reduced Risk			
Increased Reliability			
Reduced Environmental Impacts (if not monetized)			
Increased Jobs and Economic Development			
6. Determination:			
<input type="checkbox"/> Program is in the public interest		<input type="checkbox"/> Program is not in the Public Interest	

However, employees working at businesses that have participated in the program have remarked to Concord Light staff: "The light in our space is so much better since the lighting was upgraded!" How would Concord Light quantify that benefit? Several commercial property managers/owners in Town have upgraded the lighting in their tenants' spaces, even though the tenant pays the electricity bill and will enjoy the electricity savings. The property managers and owners have done so because it is beneficial to them to keep their tenants happy. How would Concord Light quantify that benefit to the property manager or owner?

Critics of the TRC argue that if it is not possible to quantify participant benefits as comprehensively as participant costs, it is preferable to exclude the participant cost/benefit category from the cost-effectiveness test, in order to avoid the inherent bias that results from inconsistent inclusion of the costs and the benefits.

Following this recommendation steers us towards using a different cost effectiveness test that is also in use by utilities, the Utility Cost Test (UCT). The UCT incorporates just the utility costs and the utility benefits. It offers a perspective on an energy efficiency program as one way of meeting our customers' needs - perhaps more similarly, to how we might evaluate the cost effectiveness of a source of power supply as one-way of meeting our customers' needs. Based on this thinking, we feel that the UCT is a good basis for a cost-effectiveness test. However, because we also have a responsibility to serve the public interest, we also feel that it is appropriate to include the public cost/benefit category in our cost effectiveness test.

Applying the Cost Effectiveness Test to our High Efficiency Commercial Lighting Program
 To date, we have applied our cost effectiveness test only to our High Efficiency Commercial Lighting Program. We are not aware of any public costs that can be attributed to the program. For the time being, we have chosen to represent the public benefits category with the avoided societal cost of CO2 emissions. While there are avoided societal costs due to the reduction of other pollutants when electricity consumption goes down, they are small compared to the avoided societal cost of CO2 emissions. For that reason, we have included only the avoided societal cost of CO2 emissions at this time.

The following chart provides an overview of the application of our cost effectiveness test to the High Efficiency Commercial Lighting Program.

Concord Light's Energy Efficiency Program Cost Effectiveness Test Program Name: High Efficiency Lighting Program Date: 6/10/15

1. Key Assumptions Parameters and Summary of Results			
Analysis Le1.el			
Measure Life (Yrs.)	13	Discount Rate	2.43%
2. Monetized Utility Costs		Monetized Utility Benefits	
Rebates Paid to Participants f11		Avoided Energy Costs	
Project Inspection Costs		Avoided Forward Capacity Market Costs	
Participant Recognition Costs		Avoided Local and Regional Transmission Costs	
Marketing Costs		Avoided Substation Capacity Upgrade Costs	
3. Monetized Public Costs		Monetized Public Benefits	
		Avoided Non-Embedded Societal Cost of CO ₂ Emissions	
Ratio: Present Value of Benefits to Present Value of Costs			4.7:1

Rebate is \$1,000/kW of Reduced Demand

In particular, we were interested in testing the cost effectiveness of increasing the rebate from \$525/kW of reduced demand to \$1,000/kW of reduced demand. Modeling done at National Grid indicates that \$1,000/kW of reduced demand is about 1/2 of the cost difference between installing code-compliant lighting and installing lighting that is 10-20% more efficient than required by code. National Grid's experience is that this rebate

level is enough to incentivize businesspeople to install lighting that is more efficient than required by code, without being excessive.

Commercial lighting systems are projected to last about 13 years. Therefore, the rebates that we distribute to participants in a particular program year continue to yield benefits for over a decade into the future. We calculated the present value of the future stream of benefits, as well as the present value of the future stream of costs that we will incur to run the program for years into the future. The discount rate used is typical of Concord Light's rate of return.

The ratio of the present value of the future stream of benefits to the present value of the future stream of costs is almost 5 to 1. This outcome gives us confidence that at a rebate level of \$1,000/kW of reduced demand, the High Efficiency Lighting Program serves our customers' interests.

Going Forward

Concord Light's new cost effectiveness test is a measure of whether the ratepayer benefits of a program outweigh the program costs. Going forward, Concord light plans to apply its cost effectiveness test to existing energy efficiency programs, as we revise them, and to new energy efficiency programs, as we develop them. The test results will help guide the evolution of our energy efficiency program portfolio.

Reference

Woolf, Tim; Malone, Erin; Neme, Chris and LeBaron, Robin. "Unleashing Energy Efficiency," Public Utilities Fortnightly, p30 – 38. <http://www.homeperformance.org/content/unleashing-energy-efficiency>

2020-2021 Select Board Goals

Process

The Concord Select Board annually affirms its values and guiding principles to align its goals and objectives for improving government as it interacts with the Town Manager, committees, task forces, citizens and other units of government. In so doing, the Board aims to lead and establish strategic priorities, to provide support and guidance and encouragement where appropriate and to be collaborative, open and inclusive at all times.

Values and Guiding Principles

Governance: Effective, Responsive and Transparent Governance

Public Health and Safety: Exemplary of Best Practices for the Safety of All

Financial Stability: Fiscal Responsibility and Financial Stability/Sustainability

Infrastructure: Sufficient and Sustainable, Well-maintained, and Reliable

Quality of Life: High Level Maintenance of Town Services for Concord Citizens

Balance and Equity: Balance and Equity among divergent individual, neighborhood, and town-wide interests

Diversity: Conscious Decision Making to Support Economic and Social Diversity and Inclusion

Historic and Cultural Heritage: Preservation and Promotion of Historic and Cultural Heritage

Agricultural and Natural Resources: Protection and Enhancement

Sustainability and Resilience: Sustainable Management of Energy Resources, Reduction of Carbon Emissions, and Regeneration of Our Natural Environment.

Economic Resilience: To Protect the Vitality of the Town and Businesses

Regional and State Interests: Advancement of Concord's Interest in the Region and the Commonwealth

Goals and Objectives

Specifically, the Board supports short and long-term goals and objectives in the following categories:

Specific to COVID-19 Pandemic

1. Prioritize public health and public safety in decision making to protect Concord citizens and Town employees during this pandemic period.
2. Implement and monitor evolving State and Federal COVID-19 regulations as they impact municipal operations and guidance for community-wide response.
3. Acknowledge the flexibility required to traditional schedules and procedures to safely respond to the impact of COVID-19 realities on matters before the Select Board and Town, taking extra care with communications to keep everyone informed and encourage engagement.
4. Encourage Town employees and committee volunteers to be mindful of their own well-being during this pandemic as they manage both personal and professional stresses in the continued delivery of quality municipal service to Concord citizens.
5. Work with the Town Moderator to produce a safe, effective, transparent Town Meeting during the COVID-19 pandemic.
6. Support the Economic Vitality Committee and business groups to find creative ways to assist businesses during the COVID-19 pandemic.

Effective Governance, Board Organization, and Communication

1. Provide ongoing support and advice to the Town Manager on leadership opportunities and issues and conduct the annual evaluation of the Town Manager's performance.
2. Continue to support the Town Manager, town departments and town committees as they implement action steps from the 2030 Envision Concord Comprehensive Long-Range Plan and other new priority areas in

their current year goals. Identify and review progress with the Town Manager at the beginning and end of the of the fiscal year. Similarly, oversee the implementation of any additional goals identified by the Select Board.

3. Monitor progress on and approve the final project funding documents between the Town and DHCD for the Christopher Heights ALF at Junction Village.
4. Seat the Junction Village Open Space Task Force and the Concord Municipal Affordable Housing Trust.
5. Provide guidance and resources for all Town volunteers serving on boards and committees to improve consistency and efficiency of public meetings and hearings. Continue training for residents serving on boards and committees.
6. Promote open and transparent government through enhanced use of technology and increased public access television. Review the charter of the PEG Access Advisory Committee in response to rapid changes in video production technology, distribution channels and remote meeting practices.
7. Work to improve citizen communications by implementing a citizen correspondence policy and resume regular publication of a Town Manager's report.
8. Recruit new committee volunteers that reflect all segments of Concord's citizenry; review the Green Card assignment process. Ensure that all volunteers are acknowledged for their willingness to serve.
9. Support and participate in the public review of all new Public Private Partnership Agreements.
10. Review the town's wireless communications policies.

Financial Stability

1. Instill integrated fiscal policies among the Select Board, the Finance Committee, and the School Committee to manage the tax burden on Concord Citizens.
2. Support management of Town services and budgets to maintain Concord's AAA bond rating and to avoid Proposition 2-1/2 Overrides.
3. Encourage the Capital Planning Task Force to develop a more effective long-term method for understanding and prioritizing the Capital and Facilities needs of the Town and the Schools, to include timetables, cost estimates, and environmental impacts.

Balance, Equity and Diversity

1. Continue to work with our State legislative representatives on special legislation filed for ATM'19 Articles 25 and 26 related to affordable housing.
2. File a request for special legislation for ATM'20 Article 15: Senior Means-Tested Property Tax Exemption and Article 50: Authorize Special Legislation for Additional Liquor Licenses.
3. Submit an ATM'21 warrant appropriation article for affordable housing following recommendations from the Affordable Housing Funding Committee final report to the Select Board.
4. Provide input to the housing production plan update to maximize the equity and diversity impacts of future affordable housing initiatives.
5. Support the Police Department's ongoing implementation of best policing practices that treat all people with dignity and respect, enhance reporting and monitoring, and deescalate volatile situations whenever possible.
6. Assess the capacity of existing Town social service programs to meet the needs of the town population and identify funding.
7. Support proactive planning for wastewater infrastructure, water, telecommunications, energy, parking, traffic, and outdoor lighting.
8. Continue to apply Concord's Sustainability Principles in town decision-making, where appropriate, and seek economic, social and environmental resiliency in both public and private sector development.

Maintaining Concord's Unique Character, Historic and Cultural Heritage, Agriculture and Natural Resources

1. Encourage collaboration among town departments for an integrated approach to land use planning to determine priorities, including conservation and acquisition of land to preserve Concord's rural and agricultural culture.
2. Enhance accessibility to recreation and conservation resources in Concord for all citizens.
3. Review and implement recommendations for the recreational use and long-term protection of White Pond and the Gerow land and their ecosystems.
4. Encourage the Natural Resources Department to continue working on and educating the public on the balance needed for general citizen use and dog friendly access, with ecosystem protection in our parks and on conservation lands.
5. Continue to monitor progress on Nagog Pond litigation.
6. Continue to seek resolution for public access to Estabrook Woods; this matter currently being litigated.
7. Launch town-wide planning for events celebrating the 250th anniversary of the American Revolution

Economic Vitality

1. Promote town events and commercial activity in the village business districts to ensure their continued success.
2. Provide input to the Thoreau Depot business district zoning and development processes.
3. Propose next steps for the Nuclear Metals/Starmet site based upon the recommendations in the committee report.
4. Identify and implement opportunities for transportation throughout town, such as shuttle buses, rail trail and the Assabet River Pedestrian Bridge.
5. Continue to work with the business sector to establish retail diversity support systems including intra- and inter-town transportation.
6. Execute and approve submission of all documents related to ATM'21 Article 16: Tax Increment Financing Agreement and EDIP Local Incentive-Only Application to the Massachusetts EACC.

Regional and State Interests

1. Meet regularly with state legislators.
2. Participate in regional organization of which Concord is a member such as HATS, HFAC, MPO, MAPC, MBTA, BRSB, MAGIC, and Cross-Town Connect.
3. Maintain active relationship with Hanscom AFB.
4. Actively participate in MMA Fiscal Policy Committee.
5. Receive an update on Minuteman Regional Technical High School.

Approved: 10-19-20

CMLP Board Action on Electric Rates

