

BURLINGTON
BOARD OF ELECTRIC COMMISSIONERS
585 Pine Street
Burlington, Vermont 05401

SCOTT MOODY, CHAIR
BETHANY WHITAKER, VICE CHAIR
LARA BONN
JIM CHAGNON
ROBERT HERENDEEN

*To be held at Burlington Electric Department (and)
Via Microsoft Teams*


[+1 802-489-6254](tel:+18024896254)

Conference ID: 279 885 253 122#

AGENDA
Regular Meeting of the Board of Electric Commissioners
Wednesday, October 25, 2023 – 5:30 p.m.

- | | |
|--|----------------|
| 1. Agenda | 5:30(5 min.) |
| 2. Minutes of the September 13, 2023 Meeting | 5:35 (5 min) |
| 3. Public Forum | 5:40 (5 min.) |
| 4. Commissioners' Corner (Discussion) | 5:45 (5 min.) |
| 5. GM Update (Oral Update) | 5:50 (10 min.) |
| 6. KPMG Audit Presentation (Expected Executive Session)
(Discussion and Vote): E. Stebbins-Wheelock | 6:00 (20 min.) |
| 7. Financials: August FY24 (E. Stebbins-Wheelock) | 6:20 (10 min.) |
| 8. District Heating Update (Discussion and Potential Vote): D. Springer | 6:30 (15 min.) |
| 9. Proposal to Enter REC Sales for a Rolling Five (5) Year Period
(Expected Executive Session) (Discussion and Vote): D. Springer | 6:45 (10 min) |
| 10. Commissioners' Check-In | 6:55 (5 min.) |

Attest:


Laurie Lemieux, Board Clerk

If anyone from the public wishes to speak during the public forum portion of the Commission Meeting and/or wishes to be present for the Meeting of the Board of Electric Commission via Microsoft Teams, please email

Note: Members of the public may speak during the Public Forum, or when recognized by the Chair during consideration of a specific agenda item.

llemieux@burlingtonelectric.com to receive a link to the meeting, or call (802) 489-6254, Conference ID: 295 615 914#

TABLE OF CONTENTS
(for 10/25/2023 meeting)

***** FYI *****

- Minutes of the September 13, 2023 Meeting
- September Monthly Report
- Dashboard
- August Financial Report

Note: Members of the public may speak during the Public Forum, or when recognized by the Chair during consideration of a specific agenda item.



To: Burlington Board of Electric Commissioners
From: Darren Springer, General Manager
Date: October 13, 2023
Subject: **September 2023 Highlights of Department Activities**

General Manager

- **Rates/Moran Frame** – BED still waiting on PUC decision regarding this as part of our FY23 rate case.
- **2023 Net Zero Energy Festival** – The NZE Festival was successful in being a bigger event than last year, and our team will debrief to consider lessons learned and ideas for continuing to improve the event and experience for customers, community members, and vendor participants.
- **Renewable Energy Policy** – Legislative renewable energy standard work group has met several times; BED participates as a voting member.
- **Charter Change** – BED is interested in a charter change to increase our credit line from \$5 million to \$10 million, to keep up with budget and inflation increases since it was last authorized. We are working on bringing an item to BOF and Council to get this on TMD ballot. It would support stronger financial metrics for our credit rating. BED has not utilized its current line of credit and does not anticipate doing so.
- **Carbon Fee Ordinance** – Ordinance Committee has held one meeting and has follow-up on 10/16. Expecting updated draft, and discussion on any amendments and then a vote to send it to full Council.
- **District Heat** – Council work session date TBD, pending final conclusion to work with key stakeholders.

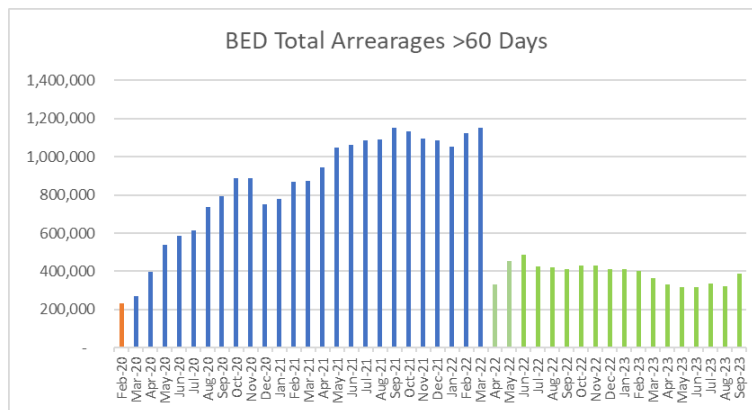
Center for Innovation - Emily Stebbins-Wheelock

- Acting supervisor of Finance & Accounting and Billing staff.
- Coordinating efforts to track and respond to federal and state funding opportunities.
 - Received \$560,000 State of Vermont grant reimbursement for new electric bucket truck.
 - Awarded \$6,760 Work-Based Training grant from State Department of Labor to fund internships in IS.
 - Received \$11,230 Public Assistance grant from FEMA/Vermont Department of Public Safety for December 2022 storm damage.
- Sponsoring effort to increase Energy Assistance Program enrollment.
- Overseeing 2022 and 2023 rate case implementation and investigation.

- Continued sponsorship of IT Forward implementations.

Finance & Billing

- Finalizing FY23 year-end and preparing audited financial statements and notes.
- Updated 5-year budget model and IRP financial model.
- Provided Moody's with pro forma income statement, capital plan, sources and uses of funds, and responses to qualitative questions.
- 2023 rate increase implementation, effective on bills rendered on/after September 1. Responded to PSD discovery questions.
- Participating in MDMS Phase 2 implementation to support EV charging integration and implement grid analytics modules.
- Pursuing FEMA reimbursement grant for July flooding damage at Winooski One.
- Completed assessment of new GASB Standard 96-Subscription Information Technology Arrangements for implementation in FY23.
- Monitoring receivables in response to COVID19: as of September 30, 2023, BED's total non-current receivables had increased \$35,020 or 4.8% compared to the end of August 2023. Arrearages >60 days were \$389,131.



Information Services

- Significant involvement in the SCADA/ADMS selection process with the Engineering team.
- MDMS Phase 2 discovery is complete and work is underway, beginning with GIS integration.
- Requirements work for the IT Forward CIS replacement continues. Pre-RFP demos have begun.
- Replacement of failed uninterruptible power supply (UPS) in Pine Street switch room.
- Awarded grant from VDOL to provide funding for two IS interns (fall 2023/spring 2024).
- Design and architecture of our disaster recovery and SCADA environments underway. RFPs to be issued soon.
- Ongoing phishing and security testing of our users.

Policy & Planning

- Filed final comments in 2022 rate case with PUC.
- Drafted IRP Net Zero chapter and shared with PSD.

- Lunch and Learn for BED employees by Amber Widmayer on legislative process.
- Comments and workshop on EV rates with PUC.
- GT back in service; planning for GT testing (reserves, capability, and biodiesel conversion).
- Drafted IRP Financial Assessment chapter.
- Responded to requests from auditors.
- Additional REC trading activity for FY24+.
- PUC/PSD held public hearing in 2023 rate case; no members of public attended.
- South Forty battery interconnection and contract meeting.
- Solar Test Center construction complete; PPA for output drafted; press conference planning underway.
- Meeting with Energy Hub on potential for vehicle telematics use for EV Rate.
- Continuing participation in PSD stakeholder advisory group surveys and questions on RES revisions.
- Winooski One Hydro FERC relicensing Pre-Application Document in process; initial meetings with State agencies.
- Research into other New England RPS potentials.
- Presentations to PUC on winter storm preparedness/activities.
- Attended VELCO DER Workshop.
- Building controls contractor work under the Large Commercial Grid-interactive Loads Pilot is complete.

Sustainability & Workforce Development

- Equity and Project Analyst continued outreach to stakeholder groups and community members, including Family Room, BHA's Bobbin Mill, Hillside Apartments, Northgate Apartments and King Street Laundry.
- Met with Vermont DCF re: Energy Assistance Program and CEDO's Housing and Lead Program re: how to increase EAP enrollment.
- Consulted with Cathedral Square Corporation on engaging residents about equity and leading internal Lunch and Learns for staff based on BED's equity efforts.
- Held equity mini retreat with members of BED team; reflected on first 6 months of Equity and Project Analyst efforts, and planned actions for next 6 months.
- Led panel discussion following screening of Episode 4 of Empowered at Main Street Landing.
- Met with Arthur Chukhman, Burlington resident and passive house owner, and Charles Dillard, City Principal Planner, to discuss passive house opportunities in Burlington and the interplay of passive house and new construction.
- Attended Wards 6, 5, 4/7, and 8 NPA meetings for discussions on McNeil, district energy, and the role of renewable fuels in the carbon impact pollution fee.
- Connected with peers in Lund, Sweden to learn about the role of district energy in carbon reduction and if/how Lund may serve as model for Burlington. Facilitated participation of Lund Energy Specialist in BED's district energy webinar.
- Facilitated tour of Pine Street headquarters for new and existing staff. Hosted September Lunch and Learn on the legislative session and key issues for BED.

- Orchestrated Drive Electric Week event at Fletcher Free Library, including electric bucket truck demonstration for students and library patrons.
- Supported NZE Festival with step-up, tabling, and education to interested participants.
- Participated in ReSource job fair with members of McNeil team.
- Worked with Communications & Technology Specialist, Adam Rabin, to edit and record new podcast episodes, including with Rob Conboy, Founder and Director of Glavel, and Kelly Lucci and Justine Sears (EVT and VEIC respectively) on recently released VT Energy Burden Report.
- Attended 2030 District Steering Executive team meeting and continued planning for national 2030 District Summit in Burlington, October 17-19.
- Met with REV team for REV 2023 Conference planning, including sponsorship outreach.
- Represented BED at annual EAN Summit in Stowe and reconnected with former Assistant Secretary of Energy Dan Reicher on DH in Burlington and project support.
- Planned October Women in Energy Happy Hour in conjunction with colleagues from Green Mountain Power and Encore Energy.

Center for Safety and Risk Management – Paul Alexander

Safety

- Conducted Generation Safety Committee meeting.
- Participated in BED Safety Committee meeting.
- Conducted Confined Space & Forklift qualification for 4 McNeil employees.
- Conducted forklift practical exercise evaluation for Pine Street employee.
- Completed September BED Safety update at Labor Management Committee meeting.
- Conducted Operational & Generation Field Audits.
- Completed weekly OSHA 300 reporting.

Environmental

- Conducted work and inspections of water systems and boiler ductwork for the fall McNeil outage.
- Conducted monthly wastewater sampling and submitted semiannual wastewater reporting.
- Planned rescue training with the fire department.
- Sent out RFP work for capital projects (cooling tower repairs, fuel oil tank inspections, and upgrades, CEMs work).
- Planned winter part 75 QA/QC work.
- Attended GT biodiesel event planning meetings.

Risk Management

- New Claims Investigations (4 total: 2 property, 2 power related).
- Confirmed NPCC PRC-006 survey response.
- Created release for Art Hop event.
- Coordinated/scheduled FM Global tour/survey of BED property and share files.
- Oversee and assign facilities work tickets on numerous issues.

- Attended L&L (VT legislature).
- Reviewed KPMG Management inquiry section on liability.
- Attended and helped coordinate NZE Festival #2.
- Conducted orientation for new yard worker employee
- Conducted property tour of 585 Pine Street for new/interested employees.
- Hired new Facilities Maintenance Specialist I.
- Attended E-ISAC Physical Security webinar.
- Walk-through property with Summit Fire to review new radar device for perimeter security.

Purchasing/General Services

- Retirement of Robyn Miller. Thank you for your years of service with Burlington Electric Department
- Welcomed Rob Barrett a transfer from McNeil, to fill the vacancy spot left by Robyn's departure.
- Instituted a new work ticket system that makes it easier for employees to fill out for things that needed to be addressed from a facilities standpoint.
- Team helped out with the NetZero festival.

Center for Operations & Reliability – Munir Kasti

Engineering & Operations

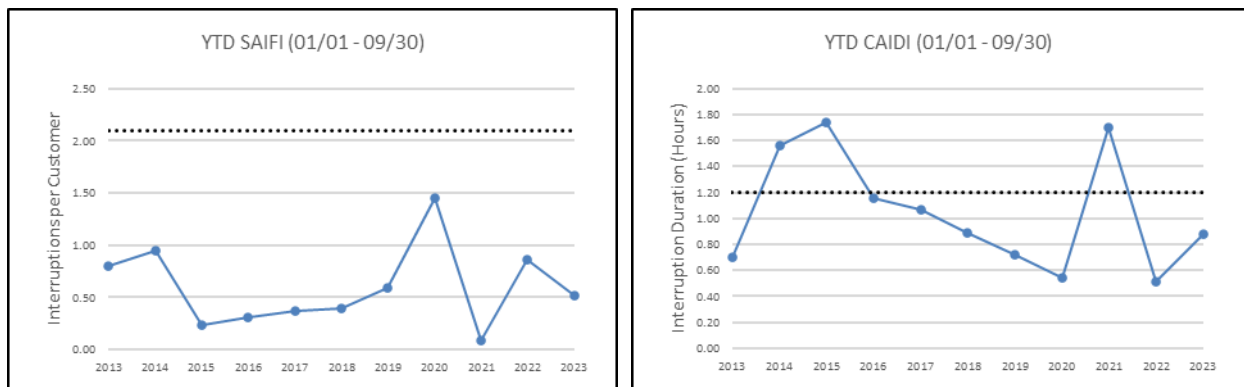
- Filled open Associate SCADA Engineer position – Rishav Sharma starts in early December.
- Issued estimate for streetlighting for Great Streets – Main Street project to the Department of Public Works (DPW).
- Continued work on designing the replacement of the underground distribution system on Summit Ridge.
- Continued pole replacement project to address condemned poles identified in FY23 pole inspections.
- Continued civil work related to the 3-phase upgrade on Ethan Allen Parkway.
- Issued design of underground replacement on Battery Street to field crews.
- Completed temporary relocation of power lines on Lakeside Avenue to accommodate Champlain Parkway civil work.
- Issued estimate for new service at DPW's Plattsburgh Avenue Pump Station.
- Issued estimate for new service at 96 Summit Street.
- Issued estimate for new service at 567 St. Paul Street.
- Continued evaluation of two vendor proposals for new SCADA Advanced Distribution Management System (ADMS) to replace existing BED SCADA.
- Updated 5-year capital plan.
- Upgraded and added new streetlights on North Willard Street.
- Replaced a leaking transformer in the underground system on Main Street with field crews, the BED Safety Director, and environmental cleanup services.
- Replaced damaged poles on Riverside Avenue.
- Completed 19 scheduled service appointments and 16 after-hours trouble calls.

- Two lineworker apprentices attended a week of training at Northeast Public Power Association (NEPPA) Training Center in Massachusetts.

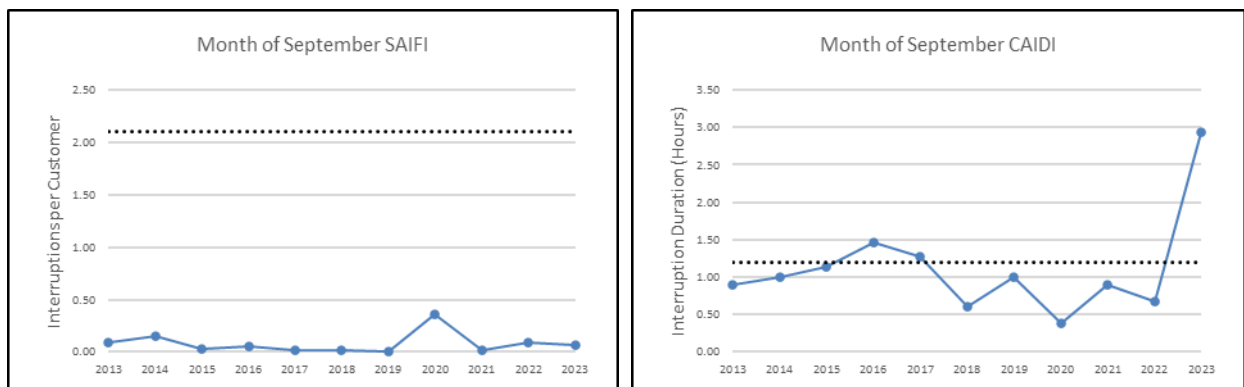
SAIFI & CAIDI Outage Metrics:

BED's distribution system experienced 19 outages in September 2023 (6 unscheduled and 13 scheduled). BED's SAIFI for the Month of September was 0.07 interruptions per customer and CAIDI was 2.93 hours per interruption. BED's YTD SAIFI is 0.52 interruptions per customer and YTD CAIDI is 0.88 hours per interruption. BED experienced a high CAIDI value in the month of September due to a contractor accident which initially took out 3L5 and then an isolated number of customers while crews made repairs.

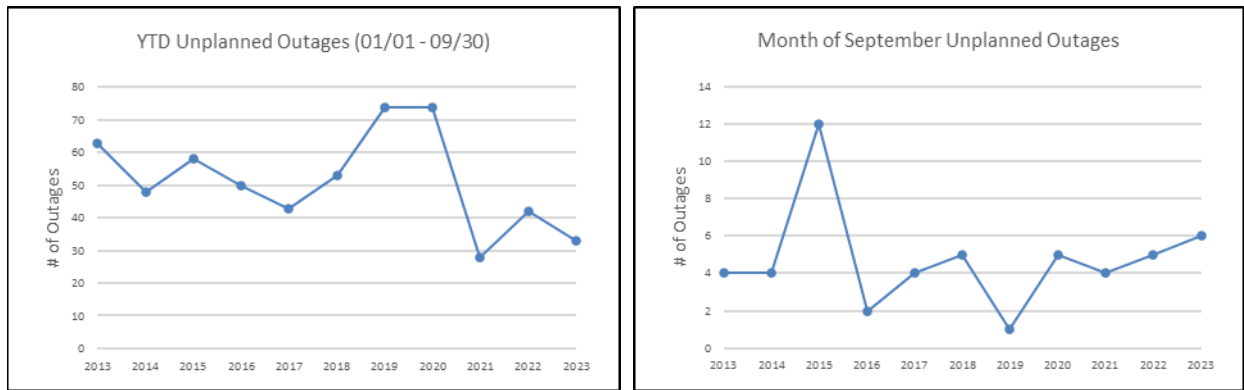
The following figure shows BED's historical YTD SAIFI and CAIDI:



The following figure shows BED's historical September SAIFI and CAIDI:



The following figure shows BED's historical Unplanned Outages:



Generation

McNeil Generating Station

Month Generation: 3,607 MWh
 YTD Generation: 153,148 MWh
 Month Capacity Factor: 10.02%
 Month Availability: 64%
 Hours of Operation: 76.75 hours

This month at McNeil the fall outage started to build wood supply for the coming winter run. During this time maintenance has been conducted on boiler tubes, ash silo and handling equipment. Miscellaneous maintenance and repairs and some capital improvements have also been in progress.

Winooski One Hydroelectric Station

Monthly Generation: 2,649.11 MWH (264.11% of average)
 YTD Generation: 27,188.09 MWH (122.579% of average)
 Month Capacity Factor: 49.72%
 Annual Capacity Factor: 56.075%
 Month Availability: 99%

At Winooski One routine maintenance, preventative maintenance, and a few process improvement projects were conducted. Flood recovery projects are also in progress and the FERC relicensing process was initiated. The fall fishing season began, which will run through November 15th.

Burlington Gas Turbine

Month Generation: 74.99 MWh
 YTD Generation: 149.69 MWh
 Month Capacity Factor: 0.54%
 Month Availability: 84.28%

Hours of Operation Unit A: 6.4
Hours of Operation Unit B: 5.5

The asset was placed back in service at full rating earlier this month. The claimed capability summer audit was conducted and repairs and routine maintenance were completed.

Solar (Pine Street 107 kW)

Month Generation: 10.6 MWh (+7% from previous year)
YTD Generation: 93 MWh
Month Capacity Factor: 14 %
Month Availability: 100%

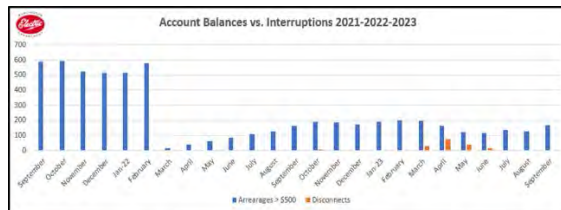
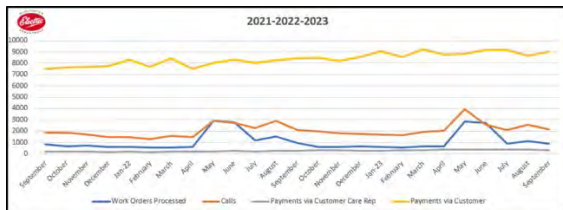
Solar (Airport 499 kW)

Month Generation: 55 MWh (+6% from previous year)
YTD Generation: 490 MWh
Month Capacity Factor: 15 %
Month Availability: 100%

Center for Customer Care & Energy Services – Mike Kanarick

Customer Care

- **Call Answer Time (75% in 20 seconds):** September 2023 76.2%, August 77.0%, July 77.3%, June 79.5%, May 70.9%, April 85.3%. September 2022 81.4%, August 69.5%, July 79.5%, June 77.5%, May 71.1%, April 85.0%. Notable that CC Team kept call answer time above 75% goal through August/September “busy time.”
- **September 2023 Stats:** please see dashboard for additional metrics categories.



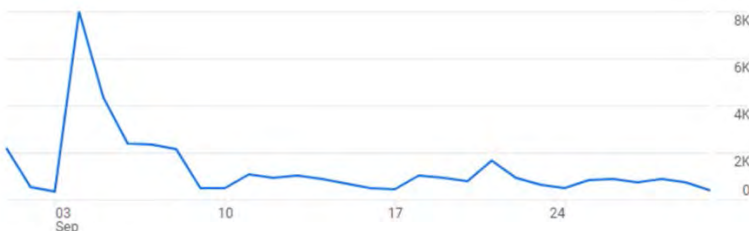
**Please note that our account balances greater than \$500 were substantially reduced with the application of more than \$1M in ARPA funds in early April 2022.*



Communications and Marketing

- Free Movie Screening & Discussion: on Wednesday, September 20, from 6:30-8:30pm at Main Street Landing, BED hosted a free movie screening of one episode of a documentary series called “Empowered: Energy Heroes,” featuring Burlington’s and Vermont’s bold and innovative work in the energy space as we power forward toward a carbon-free energy future. The post-viewing discussion featured writer/director/producer Kiki Goshay, Mayor Miro Weinberger, BED General Manager Darren Springer, Sunrun CEO (and former Green Mountain Power CEO) Mary Powell (virtually), and Dan Reicher, clean energy, and climate change entrepreneur, who has served three U.S. presidents, including as U.S. Assistant Secretary of Energy. Please visit empoweredtheseries.com to learn more.
- 2nd Annual Net Zero Energy Festival – A Supercharged Day of Family Fun! On Saturday, September 23, 2023, BED hosted our 2nd annual NZE Fest. Approximately 200 people of all ages joined us for activities focused on reducing fossil fuel use and electrifying everything, including: food trucks; live music; raffles; E-bike test rides; EV test-drives; bike parking; BED partners that provide heat pump, solar, and electric lawn care products; carshare and biking partners; BED energy experts; a special visit by our favorite, friendly, furry mascot CHAMP; and more. burlingtonelectric.com/festival
- Annual Net Zero Energy Calendar Contest: Ita Meno and Mike Kanarick, along with Vermont Energy Education Project (VEEP) Executive Director Sophia Donforth, will visit the 4th graders in all six Burlington public elementary schools during the weeks of October 9 and 16, engaging in a presentation and conversation about energy. We will invite the students to submit artwork that represents their visions of Net Zero Energy, energy efficiency, renewable energy, and sustainability. We then will judge the student artwork and select 14 winners for the 2024 calendar. Our in-person celebration will be held at BED on Thursday, November 30 for the winners, their families, teachers, and principals, complete with pizza, cake, certificates, and goodie bags, along with appearances by the Mayor and Lake Monsters’ mascot CHAMP.
- Renewable Energy Vermont Conference: BED once again will be sponsoring and tabling at this two-day conference held at the Hilton DoubleTree Hotel in South Burlington on October 18 and 19.
- Sustainability Academy’s 12th Annual Harvest Run for Sustainability: BED once again will be tabling at this event on Sunday, October 15, engaging with Burlington’s Sustainability Academy community.
- Net Zero Energy Podcast: we invite you to take a listen at burlingtonelectric.com/podcast.

- North Avenue News: our September column featured district energy, BED’s Energy Assistance Program, rebates, NZE Podcast, and tips for keeping homes warm in winter. Our September ad promoted BED’s Energy Assistance Program.
- Website and Facebook Highlights
 - Overall site-wide pageviews for September 2023 = 39,590
 - August = 74,791
 - July = 51,931
 - June = 36,499
 - May = 46,750
 - April = 40,507
 - March = 41,409
 - February = 31,290
 - January = 40,165
 - December = 20,272
 - November = 21,290
 - October = 21,797
 - September = 22,639
 - August = 27,972
 - Unique homepage pageviews for September 2023 = 19,583
 - August = 56,889
 - July = 32,716
 - June = 20,495
 - May = 27,691
 - April = 23,286
 - March = 28,317
 - February = 15,040
 - January = 21,866
 - December = 8,207
 - November = 7,371
 - October = 6,762
 - September = 6,921
 - August = 8,895
 - Pageview counts for September now are back in line with our typical results after anomalous July and August numbers.
 - Full site visits for September 2023



- Visitors by website page

page title	Sep 2023	Aug 2023	Jul 2023	June 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023	Dec 2022	Nov 2022	Oct 2022	Sep 2022
Burlington Electric Department	19583	56889	36108	21676	29074	24511	29277	19854	26553	8207	7134	7730	8080
My Bill	3034	4535	4648	2717	2811	2541	2657	2512	2735	2445	2520	2862	2850
Waste Wood Yard	970	1040	1196	1199	1634	2010	330	259	593	590	1234	1332	920
Report A Problem	445	295	309	251	104	344	91	74	82	871	167	120	455
Stop or Start Service	400	713	616	908	2256	603	269	230	289	273	294	348	407
E-billing	276	401	349	337	254	207	240	240	280	234	241	319	330
Contact Us	908	944	740	762	1192	746	485	514	474	473	507	510	553
McNeil Generating Station	876	559	597	543	572	906	384	334	396	393	614	699	624
Heat Pumps	366	413	446	501	491	515	446	421	519	408	883	508	435
Rebates	674	715	714	694	776	831	645	562	860	554	584	588	627
Rebate Center	728	713	600	715	833	769	652	595	732	524	617	609	597
Rebates for 2023	12	30	38	44	59	73	71	219	333	n/a	n/a	n/a	n/a
Stop or Start Service	400	713	616	908	2256	603	269	230	289	273	294	348	407
Leadership Team	236	251	201	198	210	244	204	191	249	178	202	216	224
Rates & Fees	239	213	207	198	295	239	216	169	209	201	226	226	289
RFP	407	626	331	329	329	354	331	316	498	413	374	516	419
Residential Ways to Save	216	157	127	169	181	173	132	123	125	134	125	133	142
Electric Vehicles	392	430	309	323	355	454	414	431	492	331	356	295	355
E-Bikes	167	235	234	199	141	205	172	114	118	76	107	151	173
Net Zero Energy News	16	12	9	40	12	28	38	23	33	40	48	40	37
Electric Vehicles	392	430	309	323	355	454	414	431	492	331	356	295	355
Our Energy Portfolio	100	55	78	99	82	94	108	85	70	49	65	74	57
Lawn Care	65	126	136	145	274	205	103	79	120	67	71	123	110
RFP Detail	478	1464	148	74	192	190	84	274	622	195	241	533	214
Defeat The Peak	151	31	226	172	16	n/a	7	3	13	8	9	12	15
Commercial Ways to Save	30	36	39	48	40	47	43	28	34	46	49	38	31

- Top-performing September Facebook posts

Podcast episode w/ Rob Conboy



Outage notification



Defeat the Peak check presentation



Controller job ad



Podcast episode w/Daryoush Khameni



Energy Services

UVM

- Terrill Hall Lab Fume Hood Project- Continued collaborating with staff, and Cx Associates, to finalize the upgrade to the controls system.
- Athletic Campus Renovation- Reviewing preliminary energy modeling results in preparation for meeting with staff and contractors in early October. This meeting will kick-off an energy design charrette process to model a variety of HVAC and envelope upgrade options including a possible geothermal test well.

UVMMC

- Main Parking Garage LED Retrofit – BED received an inquiry from a local lighting distributor concerning the upgrading of 600+ lighting fixtures in the main parking garage at UVMMC. The present fixtures are HPT8 2-Lamp fixtures installed around 2008. BED provided technical information on the existing fixtures, adding a request for additional information on the proposed fixtures so that energy savings and a rebate can be estimated.

Other Services

- Burlington School District / Integrated Arts Academy (Wheeler) Major Renovation – This month BED received the 95% design drawings for this major HVAC and envelope renovation. It is envisioned that this will be a geothermally heated and dehumidified school (no formal cooling system). The details of the HVAC design are interesting, and we look forward to an upcoming planned meeting to discuss the project in more detail.
- Burlington School District / Building Management System Optimization – BED met with the Controls Tech for the school district to discuss on-going improvements in the sequence of operation of their DDCs in several of the school buildings. Some of the improvements discussed were around tweaking the sequence of operations (SOO's) for those schools which have geothermal components to their HVAC systems.
- Rhino Foods / New Freezer Warehouse – A meeting was held several months ago between the owner and BED to discuss the final decision-making on whether this project will go ahead. Since then, we have finalized rebate offers for electrical energy savings and for a Tier 3 incentive for reduction in diesel fuel transportation usage. BED received a signed MOU from Rhino this month concerning the Tier 3 agreement. A decision on project viability is still pending.
- Burlington High School / New Construction Project – The EnergyPlus LEED Energy Model reports for this new building was supplied to BED this month. The proposed HVAC system is based on an open-loop geothermal strategy. The LEED version of the modeling will need to be modified significantly to comply with BED's energy modeling process to produce accurate energy savings compared to a Vermont baseline design. However, having this model available tells a great deal about the proposed design for the building assuming any value engineering doesn't significantly change the present basis of the design.
- 77 Pine St. Bank Building / Multifamily NC – BED is continuing to work on the finalization of the energy savings for this 49-unit apartment building. This involves the calibration of the energy model with building usage. BED has paid the first rebate payment for the project and confirmed

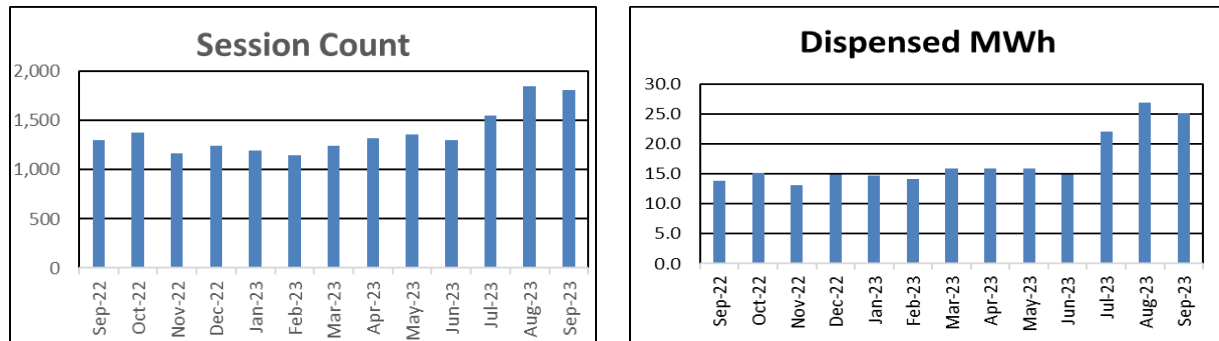
that no upstream rebates were paid for the heat pumps. However, performance problems are suspected with the building operation and we are working with the owner to integrate critical HVAC equipment into the BMS so that proper operation can be monitored and confirmed. Quotes have been obtained from the control's contractor, but work is not yet completed.

- 79 Pine (The Nest) / 49-Unit Multi-Family NC – BED continues to work on finalizing the energy modeling so that an energy savings can be determined. The apartment building has been fully occupied for several months, so the beginning of the energy model calibration process is now in progress. The financial information for the project was received by BED. A site visit was completed by BED this month, and the first preliminary rebate payment has just been made.
- Burlington City Arts / 405 Pine St. Renovation – A meeting was held in August between the architect, the energy modeler, and BED to discuss the status of the project and the structure of the energy modeling used to determine incentives. At that time, most of the renovation work had been completed, except for interior finish work and a roof replacement. The modeler is in the process of updating the modeling analysis per the final building design. The latest information this month is that the architect is still awaiting the final electrical construction documents so the modeling can be properly updated.

Electric Vehicles

- The EVSE dispensed a total of 25.1 MWh and supported 1,811 sessions.
- The top 3 sales were 79, 83, and 88 kWh and occurred at the Cherry St. and College St. garages.
- The top 10 sessions (0.5% of total) accounted for 3.1% (773 kWh) of the total monthly sales. The ten sessions ranged from 72 kWh-88 kWh.
- The EVSE served 967 unique drivers.
- The Pine DCFC installation is complete. The commissioning agent has requested that the 3/8" anchor bolts be replaced with 5/8" (as specified) and a rodent guard be added. We are working with installer to make changes.
- Approximately 20% of the energy (5.6 MWh) that was dispensed in September is attributed to the Pine St. DCFC.
- The Marketplace Garage DCFC installation is still on hold.
- Compensating Burlington Parks, Recreation and Waterfront (PR&W) for the energy dispensed from the Oakledge Park station was determined to be in conflict with our tariffs. P&P is researching options. ES has let PR&W know that we are working towards a solution.
- A replacement head for BE01 was ordered last week. Port 1 stopped dispensing energy on Sept. 13.

Session Count and Dispensed Energy plots from the public charging network are shown below.



- Number of EV and PHEV rebates to date – 602 (of this 108 LMI rebates to date as shown below)
 - New All Electric Vehicle – 258
 - New All Electric Vehicle (LMI) – 51
 - New PHEV – 138
 - New PHEV (LMI) – 43
 - Used All Electric Vehicle – 49
 - Used All Electric Vehicle (LMI) – 11
 - Used PHEV - 25
 - Used PHEV (LMI) – 3
 - New All Electric Vehicle (\$60K plus) – 22
 - New PHEV (\$60K plus) – 2
- Number of customer loans with lending partners to date – 5
- Number of customers currently participating in the new EV Charging Rate- 228
- Number of E-Motorcycle rebates to date – 2

Electric Vehicle Charging Stations

- Number of home EV charging stations rebates to date – 173
- Number of Multi-family EV charging stations rebates to date – 1
- Number of Multi-family Non-EVmatch charging stations rebates to date (LMI) – 3
- Number of Multi-family EVmatch Public charging stations rebates to date – 2
- Number of Multi-family Non-EVmatch charging stations rebates to date – 3
- Number of Multifamily EVmatch Non-Public – LMI - 1
- Number of Multifamily Non-EVmatch Non-Public – LMI – 2
- Number of Level 2 Workplace charging stations rebates to date – 8

Electric Lawn Equipment to Date

- Number of e-mower rebates to date – 676 (11 commercial & 665 residential)
- Number of e-leaf blowers to date – 73
- Number of Residential e-Trimmers – 77
- Number of Residential e-chainsaws – 13

Heat Pump Installations to Date (since the September 2019 NZEC announcement)

- Total Number of Heat Pump Technology rebates to date- 1,095 (of this 152 LMI rebates to date as shown below)
 - Number of ductless heat pumps to date – 657
 - Number of LMI eligible ductless heat pumps to date – 123
 - Number of centrally ducted heat pumps to date – 212
 - Number of LMI eligible centrally ducted heat pumps to date – 18
 - Number of air-to-water heat pumps to date – 2
 - Number of commercial VRF heat pump systems to date – 2
 - Number of geo-thermal heat pump systems to date – 1
 - Number of heat pump hot water heaters to date – 69
 - Number of LMI eligible heat pump hot water heaters participants to date – 11

Electric E-Bikes to Date

- Number of e-bike rebates to date – 539

Electric Induction Stovetops to Date (new offering in Jan 2021)

- Number of induction Stovetops rebates to date – 61

Electric Snow Blowers to Date (new offering in Jan 2022)

- Number of snow blower rebates to date – 17

BED 2023-2024 Strategic Direction Dashboard

Metrics by Strategic Initiative	Target	Sept 2023 Actuals	Aug 2023 Actuals	July 2023 Actuals	June 2023 Actuals	May 2023 Actuals	Apr 2023 Actuals	Mar 2023 Actuals	Feb 2023 Actuals	Jan 2023 Actuals	2022 Yearly Actual	2021 Yearly Actual	2020 Yearly Actual	2019 Yearly Actual
Engage Customers and Community														
Call answer time 75% within 20 seconds	75%	76%	77%	77%	80%	71%	85%	88%	89%	85%	avg 82%	avg 82%	avg 81%	
Delinquent accounts >\$500	0	171	128	137	118	122	163	197	203	194	avg 188	avg 529	avg 201	
Disconnects for non-payment	0	0	0	6	17	42	77	32	3	0	12	0	45	
Energy Assistance Program Customers (program lifetime)	NA	201	190	160	154	146	138	134						
Energy Assistance Program Customers (currently enrolled)	300	178	158	142	139	128	125	119	119	110				
# of residential weatherization completions	10	1	0	1	0	2	3	1		0	5	5	3	11
Weatherization completions in rental properties		1	0	0	0	2	2	0	2	0	6	0	0	TBD
# or % of homes or SF weatherized		TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	0
# of commercial building with improved thermal envelopes		0	1	1	0	1	1	1	0	0	4	5	5	0
Total annual mWh saved via the EE programs (annual goal)	4,657	1,494	1,343	1,276	1,010	800	654	441	130	TBD	4053			3057
Total residential annual mWh saved via the EE programs (cumulative for year)	748	471	399	369	322	286	202	141	60	TBD	862			917
Total commercial sector annual mWh saved via the EE programs (cumulative for year)	3,909	1,023	943	906	688	514	452	300	70	TBD	3191			2140
% of EEU charge from LMI customers spent on EE services for LMI customers (cumulative for 2021- 2023 year 3-year EEU performance period)	\$ 180,240	\$ 490,372	\$ 487,481	\$ 476,874	\$ 474,930	\$ 470,255	\$ 464,839	\$ 375,327	\$ 350,165	\$ 348,213	\$ 335,234	TBD	TBD	TBD
# of customers enrolled in DtP mailing list	TBD	795	800	798	782	NA	NA	NA	NA	NA				523
# of large customers participating in DtP		12	NA	12	NA	NA	NA	NA	NA	NA	11			
Strengthen Reliability														
SAIFI (AVG interruptions/customer) (annual target)	< 2.1	0.07	0.23	0.03	0.11	0.01	0.06	0.0	0.0	0.01	1.06	0.22	1.50	1.03
CAIDI (AVG time in hrs to restore service) (annual target)	< 1.2	2.93	0.23	1.17	0.39	0.91	1.51	1.36	1.22	2.17	21.39		0.55	0.75
Distribution System Unplanned Outages (annual target)	82	6	4	8	5	3	2	0	1	3	61	44	90	98
McNeil Forced Outages	0	0	0	0	0	0	1	1	0	1	14	5	21	TBD
W1H Forced Outages	0	0	0	1	0	0	0	0	0	0	6	9	2	TBD
GT Forced Outages	0	1	1	2	0	1	1	1	1	1	6	2	3	TBD
Invest in Our People, Processes, and Technology														
Avg. # of days to fill positions under recruitment	120	207	194	184	241	211	155	178	238	179	100	68	179	
# of budgeted positions vacant	0	14	12	15	12	11	11	10	7	7	avg 9	avg 9	6	NA

BED 2023-2024 Strategic Direction Dashboard

Metrics by Strategic Initiative	Target	Sept 2023 Actuals	Aug 2023 Actuals	July 2023 Actuals	June 2023 Actuals	May 2023 Actuals	Apr 2023 Actuals	Mar 2023 Actuals	Feb 2023 Actuals	Jan 2023 Actuals	2022 Yearly Actual	2021 Yearly Actual	2020 Yearly Actual	2019 Yearly Actual
Innovate to Reach Net Zero Energy														
<i>Tier 3 Program</i>														
# of residential heat pump installs		22	21	11	4	24	13	8	10	25	255	315	203	10
# of commercial heat pump installs		1	0	1	0	1	0	0	1	0	4	4	13	0
# of residential hot water heat pump installs		11	0	2	2	5	1	1	0	6	26	14	6	4
# of commercial hot water heat pump installs		0	0	0	0	0	0	0	0	0	0	0	0	0
Heat pump rebates		23	23	12	4	31	14	9	12	26	271	328	212	0
Heat pump hot water heater rebates		11	0	2	2	3	1	1	16	6	18	15	3	0
LMI heat pump rebates		4	2	3	2	0	1	2	0	0	43	28	6	4
Heat pump technology installs in rental properties		1	1	0	0	1	1	1	1	1	10	14	9	TBD
LMI heat pump hot water heater rebates		1	0	0	0	0	0	2	1	0	1	2	0	1
EV rebates - new		6	11	8	9	8	5	10	6	4	53	67	14	36
EV rebates - pre-owned		0	4	3	0	0	5	0	0	0	18	7	8	2
LMI EV rebates		3	2	1	5	0	0	1	2	1	9	11	7	7
PHEV rebates - new		2	1	2	0	1	0	4	3	3	27	41	10	17
PHEV rebates - preowned		1	1	0	0	1	1	1	1	0	12	6	5	3
LMI PHEV rebates		1	1	0	0	0	0	0	0	0	15	13	6	2
Public EV chargers in BTV (total)		32 Ports	32 Ports	32 Ports	30 ports	30 ports	30 ports	30 ports	30 ports	30 ports	30 ports	27 ports	27 ports	14
Public EV charger energy dispensed (kWh)		25,100	26,800	22,000	14,900	15,900	16,000	15,900	14,100	14,700	151,360	86,570	35,690	78,000
Home EV charging station rebates		10	3	2	7	10	12	8	5	3	70	32	20	12
EV rate charging customers (total)		228	219	213	208	204	192	178	168	162	157	40	40	28
Level 2 charger rebates		0	0	0	0	2	1	0	0	1	11	10	0	1
Level 1 charger rebates		0	0	0	0	0	0	0	0	0	-	0	1	0
E-bike rebates		14	30	11	22	23	13	3	3	0	152	88	36	65
E-mower rebates		14	21	9	21	42	16	0	0	1	159	154	95	142
E-forklift rebates		0	0	0	0	0	0	0	0	0	1	0	0	0
MWE of Tier 3 measures installed		1,703	1,834	1,888	1,737	1,892	1,563	965	786	1,602	22,837	23,763	35,112	3,342
% Tier 3 obligation met with program measures	100%	73%	64%	54%	45%	35%	26%	17%	12%	8%	131%	159%	283%	31%
<i>Net Zero Energy Roadmap Goals</i>														
# of solar net metering projects installed		5	2	2	1	1	3	5	4	5	33	29	24	33
No. of homes receiving NZE Home Roadmaps		0	0	0	0	0	0	0	0	0	7	10	7	
Residential heat pumps for space heating (no. of homes)	2022: 8615	NA	NA	NA	NA	NA	NA	NA	NA	NA	TBD	1235, 20% of goal	891	572
Commercial heat pumps for space heating (1000 SF floor space served)	2022: 5397	NA	NA	NA	NA	NA	NA	NA	NA	NA	TBD	405, 11% of goal	374	374
Residential heat pumps for water heating (no. of homes)	2022: 4365	NA	NA	NA	NA	NA	NA	NA	NA	NA	TBD	108, 4% of goal	108	87
Commercial heat pumps for water heating (1000 SF floor space served)	2022: 1019	NA	NA	NA	NA	NA	NA	NA	NA	NA	TBD	0	0	-
EV registrations in BTV (light-duty)	2022: 2294	NA	NA	NA	NA	NA	NA	NA	NA	NA	TBD	549, 45% of goal	361	296
Greenhouse gas emissions (1000 metric tons CO2)	2022: 150	NA	NA	NA	NA	NA	NA	NA	NA	NA	TBD	188, 114% of goal	185	214
Fossil fuel consumption (billion BTU)	2022: 2418	NA	NA	NA	NA	NA	NA	NA	NA	NA	TBD	3220, 120% of goal	3,182	3,660

BED 2023-2024 Strategic Direction Dashboard

Metrics by Strategic Initiative	Target	Sept 2023 Actuals	Aug 2023 Actuals	July 2023 Actuals	June 2023 Actuals	May 2023 Actuals	Apr 2023 Actuals	Mar 2023 Actuals	Feb 2023 Actuals	Jan 2023 Actuals	2022 Yearly Actual	2021 Yearly Actual	2020 Yearly Actual	2019 Yearly Actual
Demand Response														
# of Defeat the Peak events called		2	0	1	0	0	NA	NA	NA	NA	3	5	3	4
Average kW savings per DTP event		400	0	316	0	0	NA	NA	NA	NA	463	419.5	261	242
Manage Budget and Risks Responsibly														
Safety & Environmental														
No. of workers' compensation/accidents per month	0	0	2	1	0	1	1	0	1	0	16	4	8	
Total Paid losses for workers' compensation accidents (for the month)	annual	\$30,882	\$2,298	\$3,887	\$10,839	\$5,357	\$4,412	\$2,472	\$8,466	\$4,031	\$ 145,102	\$ 93,612	\$ 165,402	\$38,288
Lost Time Incident Rate (days/year) (Dec numbers reflect annual results)	<= 3.5 annual	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.99	0.0	0.93	0.89
Lost Time Severity Rate (days/year) (Dec numbers reflect annual results)	<= 71 annual	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	112.63	0.0	41.71	78.2
Lost work days per month	0	30	21	0	0	0	0	0	0	0	avg 9	0.0	45	
NOx reporting levels to EPA (Quarterly) (lbs/mmbtu)	<0.075	0.072	0.072	0.069	0.067	0.075	0.070	0.070	0.070	0.067	0.06	0.07	0.07	
# of reported spills, waste water incidents (monthly)	0	0	0	1	1	0	0	0	0	0	6	4	4	
Phosphorus levels to DEC in lbs (monthly/yearly total)	<0.8/37	0.071/0.774	0.074/0.707	0.049/0.639	0.032/0.597	0.048/0.674	0.294/0.650	0.037/0.475	.050/.543	0.017/0.560	0.688	2.028		1.169
# of new power outage claims reported (monthly)	1	2	1	0	0	0	0	0	0	0	5	7	4	
# of new auto/property/other liability claims reported (monthly)	2	2	2	5	4	6	2	4	2	2	27	18	27	
Purchasing & Facilities														
# of Purchase Orders for Inventory (Target: avg for winter months)	42	50	31	61	23	36	59	56	72	40	636	644	593	
\$ value of Purchase Orders for Inv. (Target: avg dollars spent during winter)	\$78,000	\$123,262	\$227,144	\$234,876	\$67,205	\$78,868	\$130,111	\$94,837	\$196,551	\$229,809	\$ 4,861,023	\$ 3,278,620	975,531	
# of stock issued for Inventory (Target: avg during winter months)	320	620	681	490	470	695	575	571	516	569	6,187	4,402	4,545	
\$ value of stock issued for Inventory (Target: avg. during winter)	\$ 65,000	\$ 134,091	\$ 140,668	\$ 100,819	\$ 57,035	\$ 141,919	\$ 317,305	\$ 130,896	\$ 175,308	\$ 275,666	\$ 2,200,233	855,456	1,086,478	
# of posters pulled from poles monthly (Target: goal to remove each month)	58	48	24	35	179	88	43	59	43	73	900	2,728	627	
# of Spark Space and Auditorium setup/breakdowns monthly (Target: Covid impact)	3	17	23	10	19	23	18	20	9	16	132	88	87	
Finance														
Debt service coverage ratio (avg of previous 12-months)	1.25		4.05	4.25	3.77 (prelim)	2.71	3.83	2.36	2.64	3.91	NA-FY basis	NA-FY basis	NA-FY basis	NA-FY basis
Adjusted debt service coverage ratio (avg of previous 12-months)	1.5		1.4	1.48	1.28 (prelim)	0.84	1.02	0.67	0.8	1.02	NA-FY basis	NA-FY basis	NA-FY basis	NA-FY basis
Days unrestricted cash on hand	>90		105	102	93 (prelim)	107	117	93	100	120	NA-FY basis	NA-FY basis	NA-FY basis	NA-FY basis
Power Supply														
McNeil generation (MWH) (100%)	per budget	3,607	16,707	35,538	13,989	1,360	0	22,522	29,391	30,034	228,981	273,355	192,696	
McNeil availability factor	100%	64%	99%	97%	100%	98%	32%	94%	100%	84%	67%	80%		
McNeil capacity factor	per budget	10%	45%	96%	39%	3.7%	0%	61%	87%	81%	52.4%	62.4%		
Winooski One generation (MWH)	per budget	2,649	4,068	3,285	1,987	2,505	3,717	2,878	2,489	3,609	25,350	24,752	21,194	
Winooski One availability factor	100%	99%	99%	80%	99%	99%	99%	99%	99%	99%	98.3%	97%		
Winooski One capacity factor	per budget	50%	74%	60%	37%	46%	69.8%	52.3%	50.1%	67.7%	41.7%	37%		
Gas Turbine generation (MWH)	NA	75.0	61.8	47.1	0.0	0	0	8.1	4.7	0.0	356	373	441	
Gas Turbine availability factor	100%	84%	21%	0%	50%	39%	35%	36%	0%	0%	54.5%	96%		
Gas Turbine capacity factor	NA	0.5%	0.4%	0%	0%	0%	0%	0%	0%	0%	0.2%	0.21%		
BTV solar PV production (mWh)		493	531	533	571	723	531	359	233	82	5,260	5,015	5,182	
Cost of power supply - gross (\$000)			2,835	\$2,983	-\$910	\$2,639	\$2,509	\$3,558	\$2,953	\$2,772	\$36,755	\$30,285	\$31,081	
Cost of power supply - net (\$000)			\$483	\$2,983	-\$910	\$1,995	\$1,534	\$3,558	\$927	\$2,772	\$27,487	\$22,134	\$23,388	
Average cost of power supply - gross \$/KWH			\$0.10	\$0.09	-\$0.03	\$0.11	\$0.10	\$0.13	\$0.11	\$0.10	\$0.11	\$0.09	\$0.10	
Average cost of power supply - net \$/KWH			\$0.02	\$0.09	-\$0.03	\$0.08	\$0.06	\$0.13	\$0.04	\$0.10	\$0.08	\$0.07	\$0.08	

**DRAFT MINUTES OF REGULAR MEETING
BURLINGTON ELECTRIC COMMISSION**

Wednesday, September 13, 2023

The regular meeting of the Burlington Electric Commission was convened at 5:35 pm on Wednesday, September 13, 2023 at Burlington Electric Department at 585 Pine Street, Burlington, Vermont and virtually through Microsoft Teams.

Channel 17 was present to record this meeting.

Commissioners Jim Chagnon, Robert Herendeen, Scott Moody, and Bethany Whitaker were present. Commissioner Lara Bond was absent.

Staff members present at 585 Pine Street included Paul Alexander, Rodney Dollar, Erica Ferland, Mike Kanarick, Munir Kasti, Laurie Lemieux (Board Clerk), Betsy Lesnikoski, Paul Nadeau, Paul Pikna, Darren Springer, and Emily Stebbins-Wheelock.

Staff members present via Microsoft Teams included James Gibbons, David Cressy, and Amber Widmayer.

1. Agenda

The agenda was updated to reflect the following changes:

Added Item 6a. June Preliminary Financials

Cybersecurity Update was moved to Executive Session

Item 10. IRP Update was removed

Commissioner's Check-in was moved to immediately follow Item 9. Cybersecurity Update

2. July 12, 2023 Meeting Minutes

Commissioner Chagnon made a motion to approve the minutes of the July 12, 2023 Commission Meeting; the motion was seconded by Commissioner Whitaker and approved by all Commissioners present.

3. Public Forum

Mr. Peter MacAusland was present for the meeting.

4. Commissioners' Corner

Commissioner Herendeen stated that in the monthly report there was reference made to battery storage and asked Mr. Springer to elaborate. Mr. Springer stated that there is interest at the South Forty Solar Project to evaluate the economics of adding battery storage. In the past, we have had a few different opportunities where we tried to consider utility scale battery storage around the City. This proposal could be a good opportunity. We definitely are interested in evaluating, but battery storage must align for BED in terms of production opportunities, unless it's part of a microgrid with some resiliency component (unlikely in this case). We may be able to get some value from other services with peak production being the main one. It's possible that inflation reduction credits could create favorable economics.

5. GM Update

Mr. Springer stated that BED has proudly put in service the state's first electric bucket truck, which is now operating as part of our line crew fleet. The truck already has been out working in the community, and we are working through a couple minor issues with the chargers. Meanwhile we are able to charge the truck. The truck will be popular at a number of events, including our Net Zero Energy Festival and the REV Conference.

Line worker Ciaran Canavan did a great job at the press event explaining how the truck operates. He also conducted a bucket demo, extending the boom 60 feet into the air and explaining how the mechanics work. Ciaran shared that there are multiple batteries used to power the truck – one to drive the truck, a second battery to operate the bucket/boom system, and even a backup battery within the bucket in the unlikely event the bucket battery ran out of charge and a line worker needed a way to lower the bucket back down.

Our Net Zero Energy Festival 2023 will be September 23 with a rain date of September 24. We are excited to host our second annual event for the community, with fossil-fuel free food trucks, City Departments and the City EV fleet, touch-a-truck with our new electric bucket truck, EV test drives and e-bike test rides, solar and heat pump and other technology partner vendors, CHAMP from the Lake Monsters, the VEEP education program, an e-bike giveaway sponsored by VSECU and North Star Sports, an e-lawn trimmer giveaway sponsored by ACE Hardware, DJ and live music, and our first-ever NZE Award.

Mr. Springer stated that the carbon fee ordinance advanced from the TEUC Committee on August 15. We are waiting for the Ordinance Committee to hold a meeting to consider the Carbon Fee Ordinance. This meeting could happen as early as next week, but we are not sure if it will be one in a series of meetings or if the Committee will try to resolve everything at one meeting. Once the Committee does its work, then the Ordinance goes before the full City Council, with a goal to have it implemented for 2024.

We have had two successful Defeat the Peak runs so far this summer, with partners Old Spokes Home and Intervale Center, and a third upcoming with Age Well.

Mr. Springer stated that our customer bills contain both a FY23 and a FY24 line-item surcharge, as we await Public Utility Commission (PUC) action on last year's surcharge. The issue that's been holding us up is a resolution on the Moran Frame payments.

The Department of Public Service has been reasonably supportive of our position and PUC Counsel had raised concerns about prior negotiations around the Moran Frame and how those impacted this current arrangement.

At the September 7, 2023 oral argument, our attorney Bill Ellis represented BED, and we're now waiting to get resolution so we can include the FY23 rate case as part of our current rates as opposed to a separate line-item surcharge.

Typically, we would have only one line-item surcharge on a bill at a given time, but the FY23 rate case is still pending.. Mr. Springer will keep the Commission updated.

Mr. Springer stated that the panels are going in today at the McNeil solar test center, and we soon will establish a commissioning date. Once the date has been decided, Mike Kanarick will inform the Commission.

6a. Preliminary FY23 June Financials

Ms. Stebbins-Wheelock reviewed the June FY23 unaudited preliminary results, which were included in the packet that the Commission received in August. Ms. Stebbins-Wheelock noted that these numbers are subject to change as the Department finalizes its financial statements for FY23. The preliminary results show a positive net income of \$3.24 million, driven in large part by the adjustment in purchase power expense to create a regulatory asset of \$4.162 million for lost excess winter energy revenue and amortize it over 8 years. The Department has sought PUC approval of this regulatory accounting treatment in the 2023 rate case filing. The Department spent about 88% of its total FY23 capital budget; production capital expenses were higher than budget due to gas turbine repairs that were unanticipated. Timing of work affected expenditures on other projects. As was reported at the June meeting, the Department ended FY23 with \$4.463M in operating cash, which was about \$217K less than we had budgeted to begin FY24 with. The preliminary Moody's rating factors for June 2023 are an adjusted debt service coverage ratio of 1.28 and 93 days cash on hand. The cash on hand number improved because operating expenses decreased due to the adjustment for the winter energy revenues.

6. FY24 July Financials

Ms. Stebbins-Wheelock presented the July 2023 financial results. July's results were positive due primarily to a combination of warmer than normal weather, strong McNeil and Winooski One

production, and relatively strong energy prices.

The Department's net income for the month of July was \$284K compared to a budgeted net loss of 312K, which is \$596K better than budget.

Sales to customers was better than budget by \$67K or 1.3%. Other revenues, primarily EEU, were less than budget by \$204K.

Net power supply expense was favorable to budget by \$289K in July. Fuel expense was unfavorable to budget by \$296K because McNeil production was 29% over budget and the wood price was 7% over budget. Purchased power expense was \$488K better than budget due to lower than budgeted wind production and sale of excess energy to ISO-NE partially offset by lower forward reserve revenue caused by the Gas Turbine being offline. Transmission expenses were \$97K favorable to budget.

Other operating and maintenance expenses were favorable to budget by \$426K due to timing of EEU rebates and outside services expenditures.

Capital spending for July was \$1.1M or 10% for the year. The month's capital expenditures include the total cost of the new electric bucket truck, which will be partially offset from State grant proceeds.

Operating cash at the end of July was \$4.8M compared to a budget of \$4.9M.

The debt service coverage ratio is 4.25, the adjusted debt service coverage ratio is 1.48, and the days cash on hand is 102.

7. District Heat Update

Mr. Springer stated that we originally had planned to have a work session at the City Council as early as September, but we've asked to move that back to October 10. The additional time will allow us to conclude the discussions around the potential terms, the project, the economics, and the financials with the UVM Medical Center.

We have been visiting a number of the NPAs in response to requests to discuss district heat.

We also hosted a district energy webinar yesterday with panelists, including Rob Thorton, President of the International District Energy Association, Markus Paulsson from Lund, Sweden, Peter Cherry from Dalhousie University in Halifax, Nova Scotia, and Ken Smith from St. Paul, Minnesota. The event was moderated by Linda McGinnis, who is a South Burlington resident and has done energy work for both Governor Shumlin and Scott, and also for the Obama administration.

The webinar allowed for an interesting presentation of how other district energy systems operate. Although they are not identical to the model we're contemplating, they all use biomass with district heat and, in some cases, a combined heat and power application.

We have posted three Q&A documents on our website covering McNeil economics, district energy itself, and climate and forestry as they relate to McNeil. Also, we have responded to comments we've heard in the community in an effort to provide additional information.

We are looking to hold a City Council work sessions on October 10 and, if we reach a point in the next several weeks where we get a "project go," we will try to move the project forward through the City Council process. Mr. Springer stated that we are anticipating presenting at our October Commission meeting an agenda item with a full proposal and asking for a potential vote prior to moving the item through the Council process.

Commissioner Whitaker stated that this is a complex topic and agrees that most of the community is not engaged on this topic, despite BED's efforts. Not everyone attends an NPA meeting and not everyone is going to attend a webinar, and unfortunately many people in the community are not even aware that we're looking at district energy or that there's any potential debate around it, good or bad.

Mr. Springer stated that, he feels if our district energy proposal moves to the Council, BED will have a unique opportunity to focus the discussion and present the project in as clear and concise a way as possible.

Mr. Springer stated that, in preparation for the NPA presentations, he has developed 10 slides and will share this presentation with the Commission.

8. Public EV Charger Deployment Plan

Ms. Stebbins-Wheelock and Mr. Nadeau presented a PowerPoint presentation on Public EV Charger Deployment based on several months of work by a team of BED employees. BED has been deploying EV Chargers since 2013. With the adoption of the Net Zero Roadmap and the issuance of the 2022 Net Zero revenue bond, we identified the need to have a long-term plan for the number and locations of future EV chargers in the City. This group was formed to develop these recommendations. This presentation was also the basis for the application we submitted for a U.S. Department of Transportation grant to fund EV charging deployment.

The process that was followed included:

- Projecting the number of EV chargers needed over the next 5-7 years;
- Developing criteria for ranking and prioritizing the installation sites;
- Using the criteria to rank and score the City's major neighborhoods;
- Brainstorming a list of possible EV charger locations;

- Plotting the preferred locations on a map;
- Using the map to identify gaps, considering income by census tract, locations of current chargers, housing density, commercial property density, and locations of subsidized multifamily housing.

The next slide showed the results of a regression model developed by Freddie Hall in Policy & Planning, which assumes growth of EVs of approximately 25% per year and indicates the percentages of Level 2 and Level 3 chargers in the commercial and residential areas and the number of ports the Department will install each year.

The group then looked at site selection based on the following criteria:

Commercial Locations (DCFC/Level 2)

- Number of visits per year
- Multimodal transportation proximity
- Amenities/Touristy
- High load factor
- Ability for expansion
- Cost

Residential/Community Locations (Level 2/Level 1 by exception)

- Housing density proximity
- Justice40/DAC census tracts/BIPOC
- Partnerships with location organizations
- Multimodal transportation proximity
- Community preference
- Lighting
- No site access limits – no fees/permits required

The next series of slides showed the results of the analysis to identify recommended EV charging sites by City neighborhood:

- Downtown
- Waterfront
- Old North End
- New North End
- East End/Student Neighborhood
- South End

Ms. Stebbins-Wheelock closed the presentation by stating that BED is seeking US DOT funding for this plan through 2030, which includes a total of 200 charging ports at a cost of \$6.6M. If we are awarded the grant, BED will be responsible for a 20% cost share, approximately \$1.3M.

8a. Commissioners' Check-In

Commissioner Whitaker asked if the Department knows what streets it will be changing the lighting next year? She added that it makes sense to communicate proactively about upcoming streetlighting updates so we may engage in community conversations before problems arise. Commissioner Whitaker suggested that, at the November or December Commission meeting, it would be beneficial to talk about a community engagement plan for March or April before installations in June and July.

Based on upcoming agenda items in October, this would be an agenda item in November or December.

9. Cybersecurity Update

Mr. Springer stated that it's good practice for the Department to regularly update the Commission on cyber security practices, issues, and items and to let the Commission know what our team is working on to be proactive.

Mr. Springer applauded Ms. Ferland's leadership and her team on this cybersecurity issue and stated that they have been incredibly dedicated and proactive.

Due to the sensitive nature of this topic, we recommend that this discussion take place in Executive Session.

At this time, the Commission will enter into Executive Session to discuss updates on BED's Cybersecurity plan.

Commissioner Whitaker made a motion that premature general public knowledge regarding Burlington Electric Department's BED's Cybersecurity update would clearly place the Burlington Electric Department at a substantial disadvantage per Title 1, Section 313 (a)(1) of the Vermont Statutes; motion was seconded by Commissioner Chagnon and approved by all Commissioners present.

Commissioner Chagnon made a motion to enter into Executive Session with Burlington Electric Department Staff to discuss BED's Cybersecurity update, under the provisions of Title 1, Section 313(a) (1)(A) of the Vermont Statutes; the motion was seconded by Commissioner Herendeen and approved by all Commissioners present.

Commissioner Herendeen made a motion to enter into Executive at 6:49 pm with Burlington Electric Department staff to discuss BED's Cybersecurity update; the motion was seconded by Commissioner Chagnon and approved by all Commissions present.

Commission Herendeen made a motion to exit Executive Session at 7:15 pm; the motion was

seconded by Commission Whitaker and approved by all Commissioners present.

Commissioner Herendeen made a motion to adjourn; the motion was seconded by Commissioner Whitaker and approved by all Commissioners present.

The meeting of the Burlington Electric Commission adjourned at 7:15 p.m.

Attest:



Laurie Lemieux, Board Clerk

Draft Term Sheet

Contributor: Burlington Electric Department (“BED”)

Recipient: Burlington District Energy System (“BDES”)

Product: Vermont Renewable Energy Standard Tier 3/Energy Innovation (“Tier 3”) Credits created by the replacement of natural gas consumption and Contributor’s facilities with thermal energy produced by the Burlington District Energy System (“BDES”)

Structure: Firm contribution subject to conditions precedent.

Term: Twenty years beginning upon commercial operation of the DES continuing as long Conditions shown below remain in effect.

Condition(s):

- (1) BDES produces at least 12,720 T3 credits for BED, or provides equivalent benefit to BED under any VT RES successor or other governmental program.
- (2) BED can claim the T3 credits associated with this contribution on an annual basis.
- (3) Hospital continues to consume thermal energy from the BDES, displacing natural gas

Contribution: During the term, and commencing with the receipt of T3 credits, BED will contribute \$665,000 annually to Recipient to assist with the incremental costs associated with converting from the use of natural gas to DES thermal energy.

Delivery: Tier 3 credits associated with the project will be created by Contributor submitting the BDES activity for the year as a portion of its RES compliance report on xx/xx/xxxx.

Tier 3 Credits/Environmental Attributes/Claims: Tier 3 credits created by Contributor shall include all attributes necessary to qualify as such under 30 § V.S.A. 8005. Recipient will make no claims that are contrary to the use of Tier 3 credits created by Contributor for their intended purpose as a compliance mechanism under Vermont’s RES. Recipient may retain any attribute that does not interfere with the use and recognition of T3 credits created by Contributor.

Conditional Integration: The transaction contemplated by this term sheet is dependent upon the acceptance of corresponding terms governing the operation of the DES and the purchase and sale of Steam and Environmental attributes between and BDES and its customer(s).

Draft Commercial Terms for the Burlington Electric Department to Provide Thermal Energy to the Burlington District Energy System

1. Term & Termination

The Burlington Electric Department ("BED") will commit to provide thermal energy from its 50% ownership share of the McNeil generating facility, up to xx MMBTU per hour, for a period of 20 (twenty) years.

A. Termination by the District Energy System (DES)

The DES may terminate this Agreement by providing BED not less than 2 years written notice of the intent to terminate provided that any obligations pursuant to Sections 1(D) and 1(E) have been fully satisfied.

B. Termination by BED during Term of this Agreement

- a. BED may terminate this Agreement at any time during the Term by providing at least 42 months' written notice to the DES if McNeil faces any event, including but not limited to action/decision taken by the McNeil Joint Owners at a duly held meeting of the McNeil Joint Owners, that results in the plant no longer being available for energy production for the remaining term of this Agreement.*
- b. In the event of a Termination pursuant to this Section, if McNeil returns to operation, BED will resume the obligation to supply thermal energy from its share of McNeil for the remainder of the then current term and will renew such obligation as described above if the resumption occurs during the Term.*
- c. If a new renewable generating facility is commissioned at the McNeil property subsequent to such termination, and such generating facility has the potential to provide thermal energy to the DES, BED agrees to negotiate in good faith toward a successor to this agreement based on the provision of thermal energy from BED's entitlement to such new generating facility.*

C. DES Rights/Obligations in the Event of Termination by BED or Subsequent Providers

In the event of a termination by BED pursuant to this section, the DES shall have the following rights/obligations:

- 1. Continued use of the premises as described in Section 2 (Use of Premises)**

2. *The Parties agree to negotiate in good faith any other associated arrangements such that the District Energy System may continue to operate following a termination by BED for the remaining term of this Agreement.*
3. *As an alternative to #1 and #2 above, the Parties may negotiate an agreement for the DES to purchase the location designated in Attachment XX and easements.*

D. DES Rights/Obligations in the Event of Termination by DES

In the event of a termination by the DES, and as a condition of such termination being effective and binding, the DES shall reach terms for the continued use of the Property and execute a final agreement covering such terms with BED and the McNeil Joint Owners that will take effect concurrent with such termination. Alternatively, the DES may elect to remove all of its installations on the McNeil property and return any impacted portions of the property to their pre-DES state within six months of termination.

E. McNeil Joint Owner Rights in the Event of Termination by DES

In the event of a termination by the DES, the McNeil Joint Owners shall have the following rights to require a performance bond sufficient to cover the cost of removal of the DES equipment and remediation of the site to its pre-existing condition.

2. Use of Premises

The DES may install and operate an electric boiler, located in a to-be-built structure, on the portion of the McNeil property designated in attachment xx. The use of the designated portion of the property shall be at an annual charge to the DES of \$_____ for the term of this Agreement.

Provided that the electric boiler is connected to BED's distribution system, BED will develop a tariff for serving that electric boiler based on the wholesale costs associated with serving such load, as well as a reasonable contribution to BEDs overall cost of operation.

The DES shall be granted a right of way/easement from the designated location of the to be built structure to the point on the McNeil property where t the DES piping exits the McNeil premises.

The Parties agree to negotiate in good faith any other associated arrangements as may be required to permit the DES to begin operations.

3. Price

The per MMBTU pricing for steam energy from the generator delivered from BED's share of McNeil output to the DES at the Point of Interconnection shall be a function of the cost of wood fuel supply for the McNeil Station as follows:

Price being paid by McNeil for Wood Chips in \$/ton <plus> variable costs associated with fuel <plus> non-wood fuel costs <plus> variable O&M associated with fuel consumption <times> conversion factor <times> 110% <equals> price per MMBTU of thermal energy.

As an example: \$40/ton <plus> \$11.80/ton <plus> \$3.65/ton <times> 0.16048 <times> 110% = \$9.79 per MMBTU using today's pricing.

and shall vary monthly based on the higher of i) the rolling average of the costs per ton for McNeil wood fuel for the twelve preceding months, ii) the price per ton being offered to McNeil wood fuel suppliers for the current month. BED shall, annually beginning on June 30, 2025, provide the DES with budgeted pricing for the next fiscal year of this agreement (for example, on June 30, 2025 BED will provide DES budgeted pricing for the 12-month period ending June 30, 2026). The budget shall include the price per ton of wood and the price per MMBTU of all thermal energy provided by McNeil, regardless of whether that thermal energy is provided in the form of steam or exhaust waste heat recovery, along with the assumed variable cost of thermal production for the same period. The price per MMBTU shall be calculated using the cost of wood fuel converted to a variable cost of production of thermal energy, in either case for the period for which pricing is being provided calculated as shown above.

The price for thermal energy extracted from the McNeil stack shall be \$_____ per year escalated at the rate of inflation using the NE Urban – All Products CPI.

4. Delivery/Damages

Thermal energy shall generally be made available to the DES at any time that McNeil is operating for electricity production (unless technical reasons prevent such delivery). BED shall not be obligated for any damages for failure to deliver thermal energy at any time. BED shall use commercially reasonable efforts to overcome technical reasons preventing any delivery of thermal energy if such technical difficulty is associated with equipment owned by the McNeil Joint Owners.

5. Operational Scheduling

The operation of McNeil, in terms of dispatch periods, and hence the availability of thermal energy, shall be at the sole discretion of the McNeil Joint Owners based on the economics of producing electrical energy. Operation shall generally be based on a combination of ISO-NE and REC market factors (particularly price) and the need to maintain a viable wood supply. The specific output level of McNeil's operation shall likewise be at the sole discretion of the McNeil Joint

Owners, provided that the level of operation selected does not prevent the delivery of thermal energy to the DES during a period where the plant is operating and producing electricity.

Annually, within two weeks of July 1 of each year, the McNeil Joint Owners will provide an estimate of the McNeil operations (in the form of a planned capacity factor for the following November to March heating season). McNeil shall make commercially reasonable efforts to ensure that thermal energy shall be available for that heating season for a total number of hours not less than the capacity factor estimate times the number of hours in the heating season, absent an extended plant outage that resulted in McNeil altering the wood deliveries under its contracts with suppliers or an event constituting an event of Force Majeure.

7. Volume of Thermal Energy Available

Not less than XX MMBTU, and not more than YY MMBTU per hour of thermal energy will be delivered to the DES during any period where McNeil is online and producing at least YY MW of net electrical output. THE DES may, as needed, request any amount of thermal energy within this range of available thermal energy. Availability of thermal energy during times when the plant is starting up, or cooling down, or otherwise not online for energy production at a net electrical output of YY MW shall be at the discretion of the McNeil Joint Owners.

The DES is required to take xx MBTU of McNeil thermal energy whenever it is available, not to exceed YY MMBTU per hour, subject to having adequate customer load (and subject to availability of the DES delivery system). In the event that the DES takes less than xx MBTU in any such hour, DES will nevertheless pay for xx MBTU, less any revenue received from McNeil for the sale of net electrical output associated with the thermal energy not delivered to the DES (actual deliveries less XX MBTU if positive), but in no case shall the result of this calculation yield a payment to the DES from energy it does not take delivery of.

8. Costs associated with DES equipment located at McNeil

All costs associated with any equipment installed at the McNeil site to permit the provision of thermal energy from the steam ports on the McNeil Turbine as well as from flue gas waste heat to the DES will be borne by the DES, including, but not limited to, costs of electricity consumed by DES equipment, other operating or maintenance costs, and insurance costs). Proof of insurance must be provided by the DES, and maintained during the Term of this Agreement in the types and amounts specified by BED as long as it is commercially available and reasonable.

9. Renewability / Attributes / Environmental Credits

Any Vermont Renewable Energy Standard (RES) value associated with the operation of the DES, shall be apportioned between BED and the DES/its customers pursuant to the term sheet for Tier 3 contributions.



NET ZERO ENERGY

BURLINGTON VERMONT



About Burlington Electric Department (BED)

- Burlington's municipal electric utility
 - Public power since 1905
 - 118 employees, including the McNeil Generating Station
 - Third-largest electric utility in Vermont
- 21,000+ customers
 - 17,282 residential, 3,983 commercial and industrial
 - 5,500-6,000 residential accounts turn over each year
- Electricity facts:
 - Summer peak: ~65 MW; annual energy use: ~330,000 MWH
 - McNeil is the largest energy producer in Vermont with Vermont Yankee retirement
 - 100% of power from renewable generation as of 2014
 - Visit www.burlingtonelectric.com/mcneil for resources, Q&A, etc.





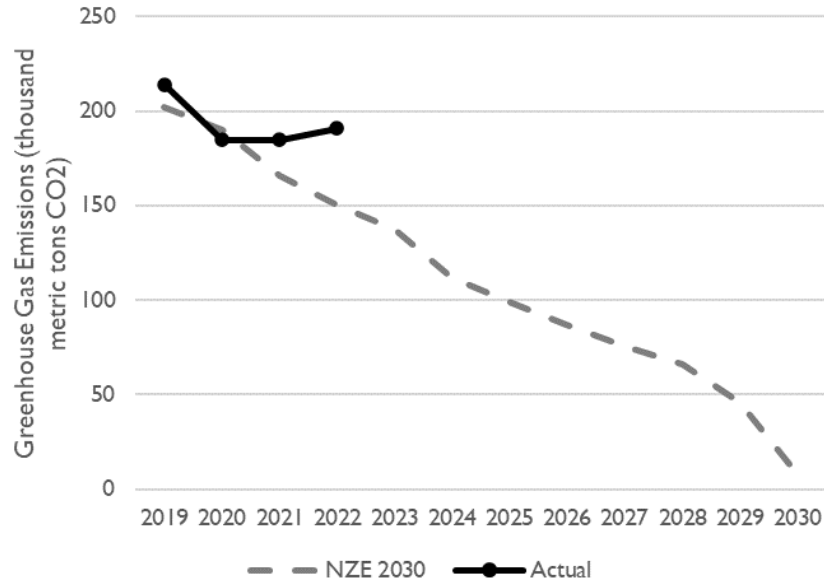
Burlington Net Zero Energy Roadmap



NET ZERO ENERGY BURLINGTON VERMONT

Reducing and eventually eliminating fossil fuel use in the heating and ground transportation sectors

GHG emissions: Thermal and Ground Transportation 2019-2022



4 Fossil Fuel Energy Reduction Pathways

1 Efficient electric buildings

60%

40% of commercial floor space and 95% of households are heated by electric heat pump and water heating systems



2 Electric vehicles

20%

80% of vehicles are battery electric (and 10% plug-in-hybrid)



3 District energy

15%

40% of commercial floor space is heated by a district energy system



4 Alternative transport

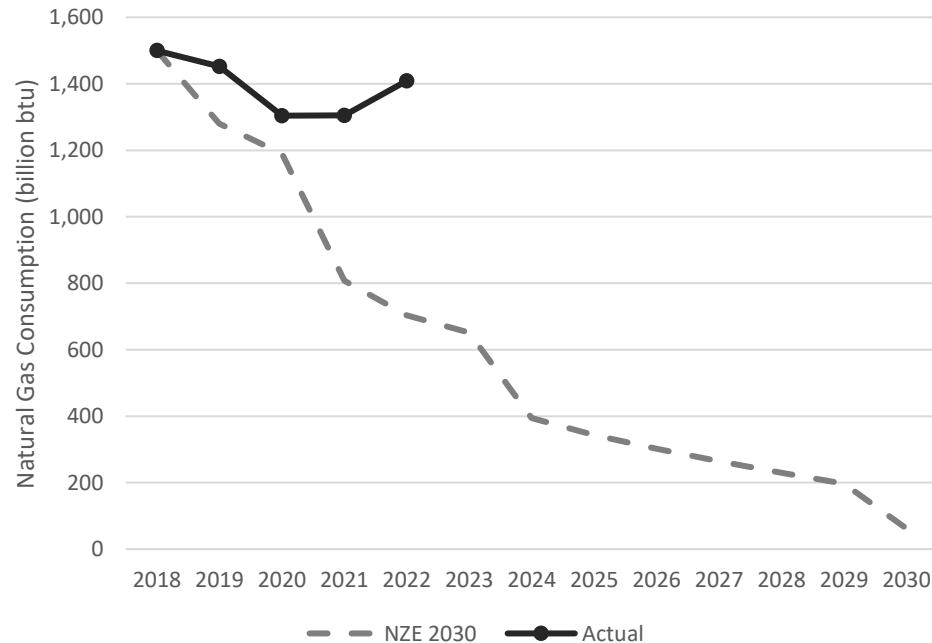
5%

Household annual vehicle miles traveled decrease 15%





2022 Net Zero Energy Roadmap Commercial Sector Natural Gas Use





Climate and Wood Energy



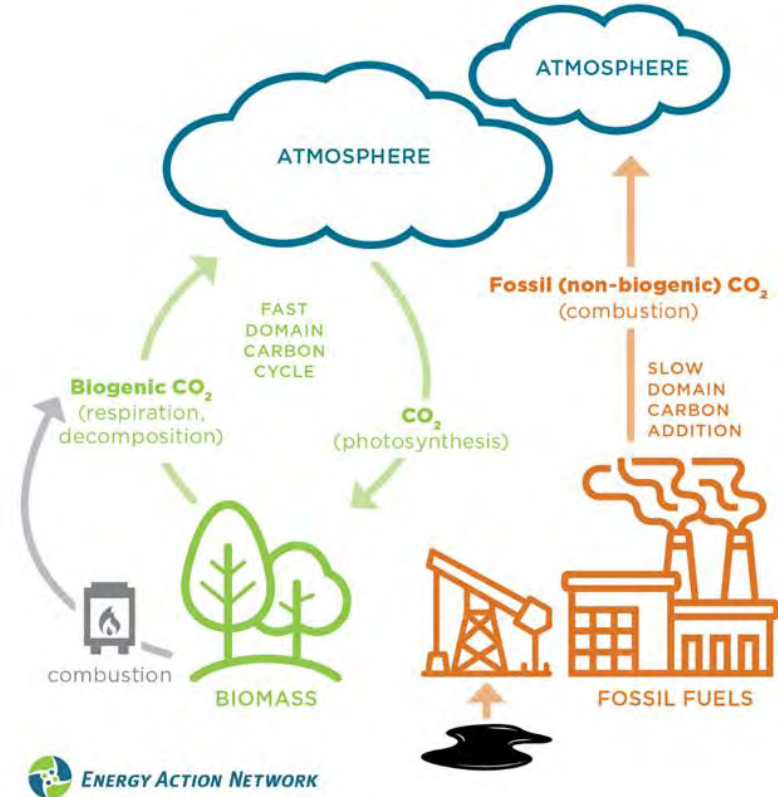
Why Does Burlington's Net Zero Energy Roadmap Focus on Fossil Fuels?



The Climate Emergency

“Of the total anthropogenic CO₂ emissions [in the last decade], the combustion of fossil fuels was responsible for 81-91%, with the remainder being the net CO₂ flux from land-use change and land management (e.g., deforestation, degradation, regrowth after agricultural abandonment [...]).”

—Intergovernmental Panel on Climate Change, “Synthesis Report of the IPCC Sixth Assessment Report (AR6)”, 2023



Resources:

https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_FOD_SPM.pdf (page 8)

and <https://www.eanvt.org/wp-content/uploads/2023/09/EAN-APR-2023-web.pdf>




How do trusted scientific and governing bodies – **Intergovernmental Panel on Climate Change (IPCC), U.S. Environmental Protection Agency (EPA), and Vermont’s Agency of Natural Resources (ANR)** – count greenhouse gas emissions from wood to ensure emissions and carbon sequestration are both captured *accurately*?

IPCC Accounting Standard

Used by EPA and State of Vermont

calculate the + and - at the same place

 CO₂ Sequestration

 CO₂ Emission





Net Carbon Change in Land Use Sector Where Wood is Procured for McNeil – *More CO₂ Sequestered and Stored than Emitted* ***Net Change = +24 million tons***

“Converting the forest carbon to CO₂ equivalent using a factor of 3.67, there are 24.3 million tons of additional forest CO₂ equivalent over the 13-year period from 2007 to 2020, or 1.87 million tons annually or 5,128 tons of CO₂ equivalent daily. Photosynthesis converts atmospheric CO₂ to sequestered carbon and free oxygen as plants grow.”

Resource –

<https://www.burlingtonelectric.com/wp-content/uploads/McNeil-Carbon-6.2023.pdf>

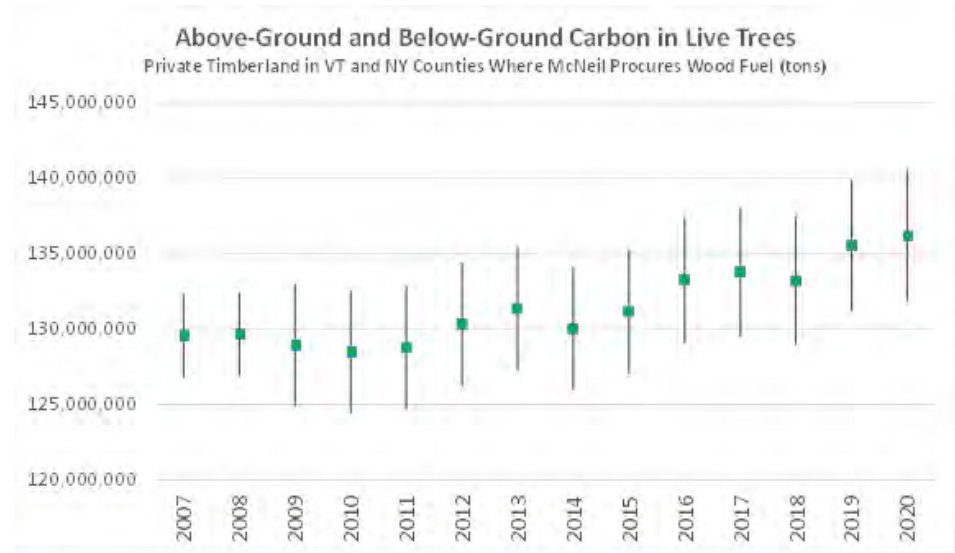


Figure 1. Tree Carbon on Private Timberland in Vermont (Addison, Chittenden, Franklin, Lamoille, Orleans, Rutland, Washington, and Windsor) and New York (Clinton, Essex, Franklin, and Warren) Counties

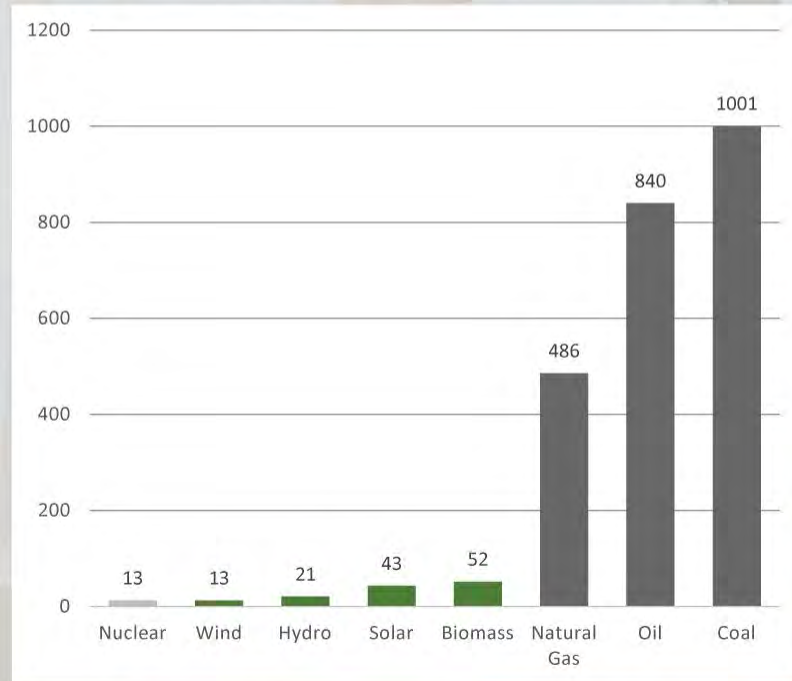


What if we use lifecycle greenhouse gas emissions analysis?

HOW MUCH CARBON DOES IT TAKE TO TURN ON A LIGHT BULB?

Grams of CO₂ required to produce a kWh of energy

Resources: <https://www.nrel.gov/docs/fy21osti/80580.pdf>





Can wood energy play a role in emissions reduction we need in timeframe called for by IPCC?

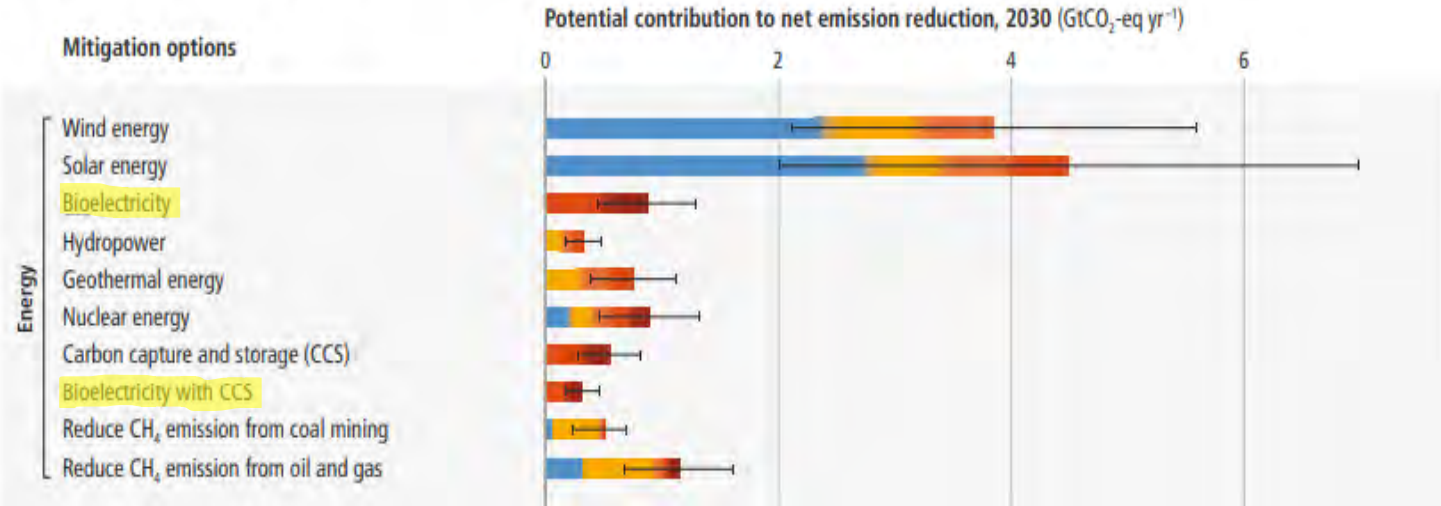


IPCC 6th Assessment 2022 Report Shows Bioelectricity as a 2030 Mitigation Option

IPCC: “In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit.”

Resources:
https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf (page 42) and
https://archive.ipcc.ch/publications_and_data/ar4/wg3/en/ch9s9-es.html

Many options available now in all sectors are estimated to offer substantial potential to reduce net emissions by 2030. Relative potentials and costs will vary across countries and in the longer term compared to 2030.



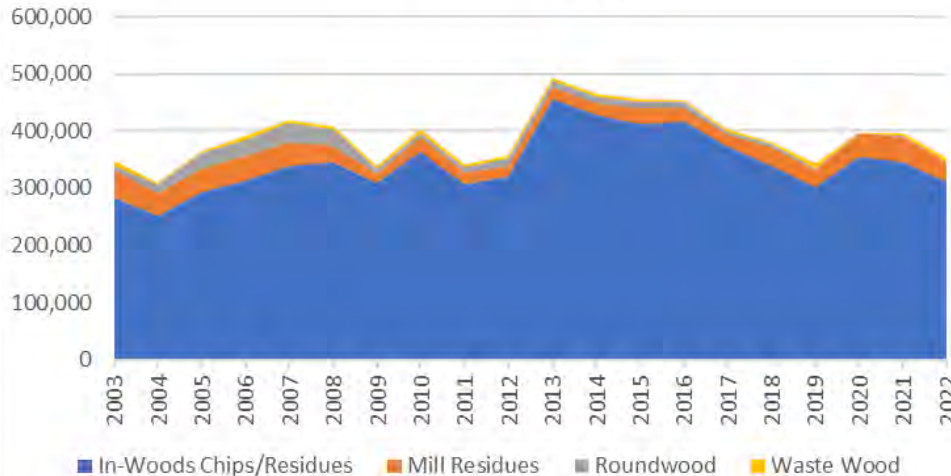


Are trees cut specifically for energy generation at McNeil? What kind of wood does McNeil use, and how does it impact the climate profile of the plant?



- McNeil uses wood residues (tops and limbs, diseased or damaged trees, non-commercial wood left over from higher-value harvests).
- McNeil does not accept wood harvests procured solely for energy production.

McNeil Fuel Supply



**Appendix to
Purchased Wood Agreements
Wood Residue Chips
Contract # _____**

Specifications:

All residues delivered under this agreement shall be of a nominal size of 1 inch by 1 inch. Twigs and oversize chips shall not exceed 5 inches in any dimension. Residues shall not be abnormally wet, dirty, decayed or otherwise in poor condition. Loads of residues which in the opinion of the Buyer, fail to meet these Specifications will not be accepted. Unaccepted loads will not be purchased.

Delivery:

All residues delivered under this agreement are to be delivered in trucks with a wheelbase which can fit on a 60-foot scale platform in a single weighing. The maximum trailer length which will be dumped at McNeil Station is 48 feet. The maximum trailer length which will be dumped at Swanton yard is 48 feet. Self-unloading trailers of any length are acceptable at either location. Any trucks deemed unsafe by the Buyer will not be allowed to deliver. Deliveries shall be subject to the provisions ordered by the Vermont Public Utility Commission including:

1. No fuel trucks may enter or utilize the five corners intersection in Essex Junction, VT between the hours of 7:00 and 8:30 AM and 4:00 and 5:30 PM Mondays through Fridays inclusive, holidays accepted.
2. No fuel trucks may enter or utilize streets or highways within the cities of Burlington or Winooski on Sundays or before 6:30 AM or after 9:30 PM on any other day.
3. No fuel shall be off-loaded at the McNeil Generating Station from any truck on Sundays or before 7:00 AM or after 9:00 PM on any other day.
4. The Seller will adhere to the recommendations of the Vermont Department of Fish and Wildlife regarding cutting near deer yards, wetlands and habitats of Endangered Species.
5. The Seller will comply with all applicable environmental protection standards established under State or Federal law.
6. The Seller will sort forest products and market them to the highest and best economic use before selling residues (tops and limbs, damaged or diseased trees, otherwise non-commercial wood) to the McNeil Station.
7. The Seller will comply with all terms and conditions of the Burlington Electric Harvesting Guidelines, receipt of which is hereby acknowledged.
8. Burlington Electric is only interested in purchasing forest residues; therefore, Burlington Electric will not accept deliveries from sites where the only prescription is solely for energy production.



Favorable Fuel Supply from climate perspective –

McNeil's reliance primarily on wood residues is favorable from a carbon payback standpoint. Even the Manomet study (cited positively by wood energy opponents including Dr. Bill Moomaw who attended the TEUC forum in June) makes clear wood residues have a better carbon profile than fossil fuels –

Finally, it is interesting to consider the “harvest” and use of just tops and limbs. While this may not be directly applicable to forest management in Massachusetts (due to poor markets for pulpwood and limited opportunities for log merchandizing), it may be representative of situations involving non-forest biomass sources, such as tree trimming/landscaping or land clearing. The results in this case (also shown in Exhibit 6-12) indicate rapid recovery, with nearly 70% of the carbon losses “recovered” in one decade. Thus, all bioenergy technologies—even biomass electric power compared to natural gas electric—look favorable when biomass “wastewood” is compared to fossil fuel alternatives.



Burlington District Energy



What is District Energy?

- In Burlington context its efficient underground distribution system to connect multiple renewable thermal sources (McNeil waste heat, McNeil steam, and supplementary electric boiler) to customer buildings.
- United Nations Environment Programme calls district energy “a secret weapon for climate action and human health” and stated that “forward-looking cities are connecting district energy with efficient buildings, waste and renewables to create integrated urban systems and achieve resilience and circularity.”



Sustainable Biomass District Energy is a Globally and Locally Recognized Climate Strategy

- **St. Paul, Minnesota** – 25 MW of electric, 55 MW of heating, 40 years of rates under inflation;
- **Lund, Sweden** – Working toward Net Zero CO2 2030 goal (50% of way in 2018). Biomass plant similar to McNeil (uses wood residues, diseased/damaged trees), and runs district energy system;
- **Dalhousie University, Nova Scotia, Canada** – 2018 biomass thermal/electric, sawmill residue;
- **France** – Uses biomass for district heating (including in Paris), Sept. 2023 announced plans to convert two remaining coal plants (1,800 megawatts) to biomass;
- **Finland** – Legal requirement for climate neutrality 2035, IEA report shows biomass and district energy, along with nuclear and wind and hydro, helped Finland reduce fossil fuel use to 36%;
- **Montpelier, Vermont** – 2014 biomass district heating system to reduce reliance on oil, savings dependent on price of oil, but in 2021 then-Mayor Watson noted she was pleased the system was online due to need to address climate change;
- **University of Maine, Farmington** – 2016 Wood chip district heating covers 23 campus buildings

Resources: <https://www.pressherald.com/2016/03/13/umaine-farmington-celebrates-new-biomass-facility/> ; <https://www.iea.org/reports/finland-2023/executive-summary>; <https://www.argusmedia.com/en/news/2492599-france-to-convert-18gw-to-biomass-by-2027-macron>, https://www.timesargus.com/news/local/district-heat-a-mixed-bag/article_61e5a260-824a-5624-a0b2-c9d7a9a00352.html
BED webinar on biomass district energy - <https://www.youtube.com/watch?v=HJkiAmCp4Qg&t=5s>,



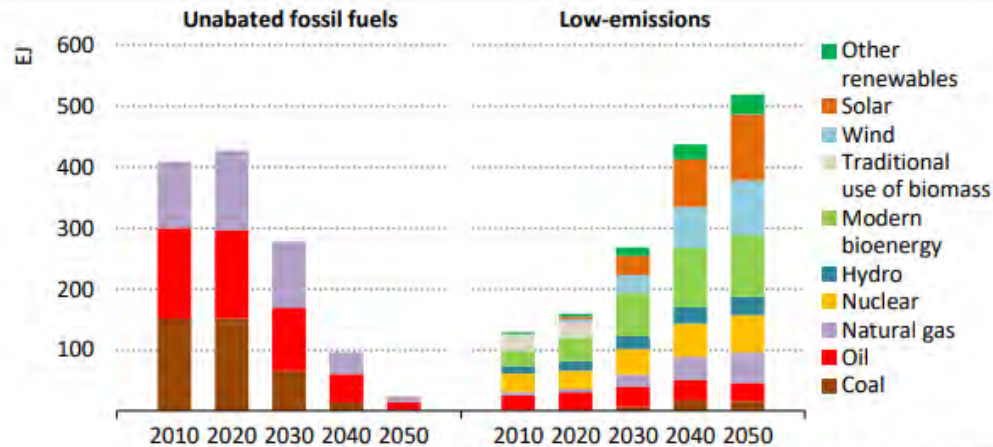
International Energy Agency (IEA) 2050 Net Zero Roadmap

Modern Bioenergy Meets 20% of Energy Needs as Fossil Fuels Dramatically Reduced

Phase out of traditional fossil fuel boilers “puts a premium on the availability of compelling alternatives...including the use of heat pumps, efficient wood stoves (using sustainable supplies of wood), **district energy**, solar PV, solar thermal and other renewable energy technologies.”

IEA member countries: Australia Austria Belgium Canada Czech Republic Denmark Estonia Finland France Germany Greece Hungary Ireland Italy Japan Korea Luxembourg Mexico Netherlands New Zealand Norway Poland Portugal Slovak Republic Spain Sweden Switzerland Turkey United Kingdom United States The European Commission also participates in the work of the IEA. Resources: <https://www.energy.gov/sites/default/files/2021-12/IEA%20Net%20Zero%20by%202050.pdf>

Figure 2.6 ▶ Total energy supply of unabated fossil fuels and low-emissions energy sources in the NZE



IEA. All rights reserved.

Some fossil fuels are still used in 2050 in the production of non-energy goods, in plants equipped with CCUS, and in sectors where emissions are hard to abate

Note: Low-emissions includes the use of fossil fuels with CCUS and in non-energy uses.



Why District Energy in Burlington?

- Improve McNeil's efficiency 10%
- Use local renewable thermal resource instead of fossil gas
- Reduces over 220,000 MMBTU of natural gas usage *every year* by creating 190,000 MMBTU of renewable steam (including 3 steam sources - waste heat, steam extraction, and supplementary electric boiler), plus 34,000 MMBTU of efficiency savings
- Cut commercial sector natural gas use 16% in Burlington, cut Burlington carbon dioxide emissions approximately 13,000 tons annually, taking single-biggest step to move towards Burlington's Net Zero Energy 2030 Roadmap goal



Current Project

- Partnership with BED, City of Burlington, UVM Medical Center, VGS, Ever-Green Energy;
- Started in late 2018, three stages of feasibility work, first-time ever a district energy project has been designed and engineered, and been shovel ready pending permits;
- \$5.16 million secured by Senator Patrick Leahy in appropriations for this project, accepted by City Council June 2022 (resolution 7.06 – 6/6/22);
- Creation of 501(c)(3) non-profit run by Ever-Green, also supported by Council in June 2022 (resolution 7.06), to finance and operate the project.



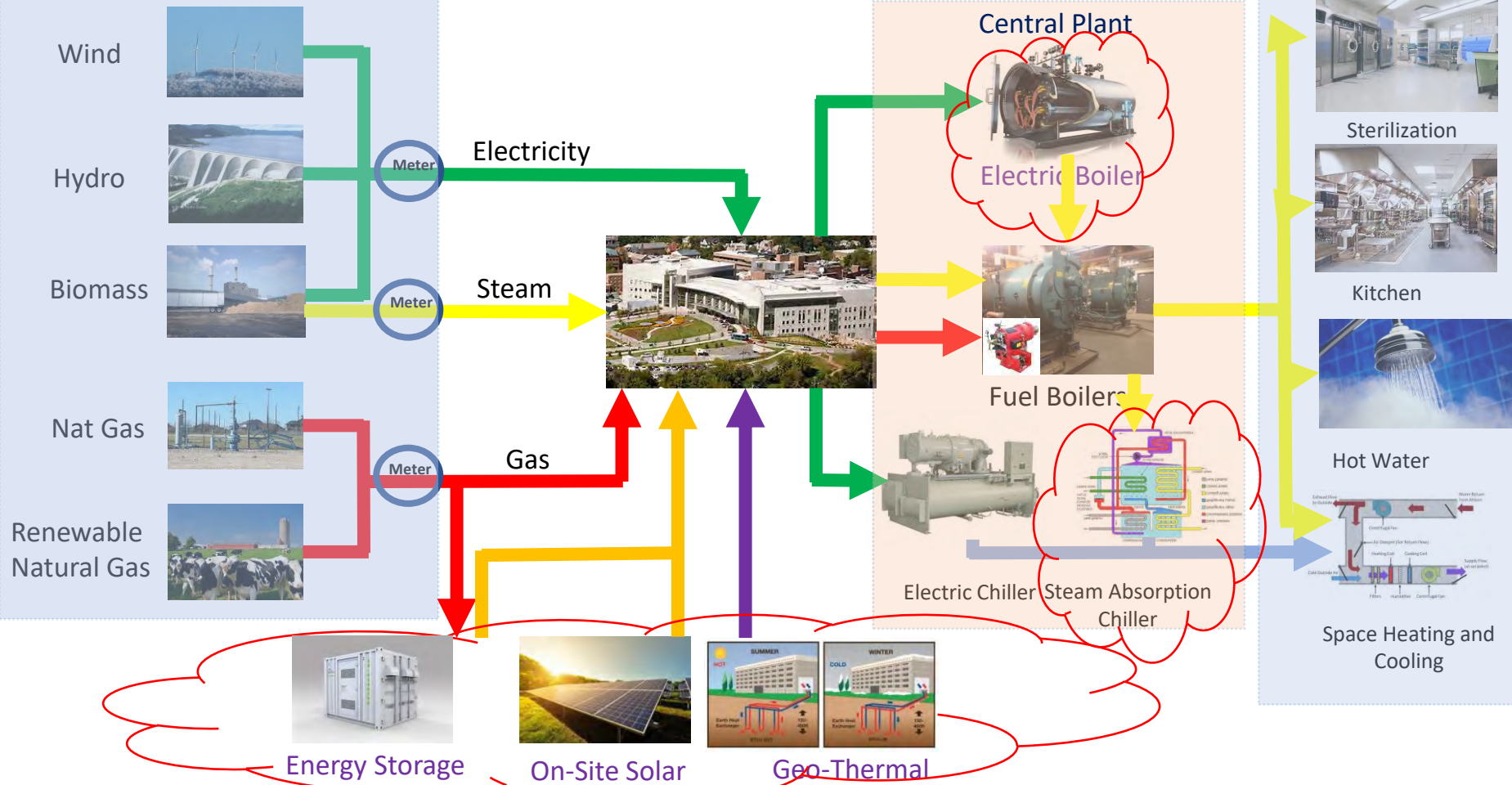
Analysis Key Points

- UVM Medical Center includes a steam-based system that prioritizes 100% reliability, district energy is a decarbonization solution for that system;
- Analyzed multiple scenarios, district energy most cost-effective decarbonization strategy that also works with steam;
- Geothermal is strongly supported by BED & VGS, but is not a fit for steam system. We looked at hot water-based system with Corix in 2016-2017, but it did not advance;
- BED and VGS work closely with UVM Medical Center on energy efficiency;
- Solar and wind are not applicable (don't create steam).

Utility Energy Inputs

Medical Center Energy Systems and Uses

End Uses





Key Financial Terms

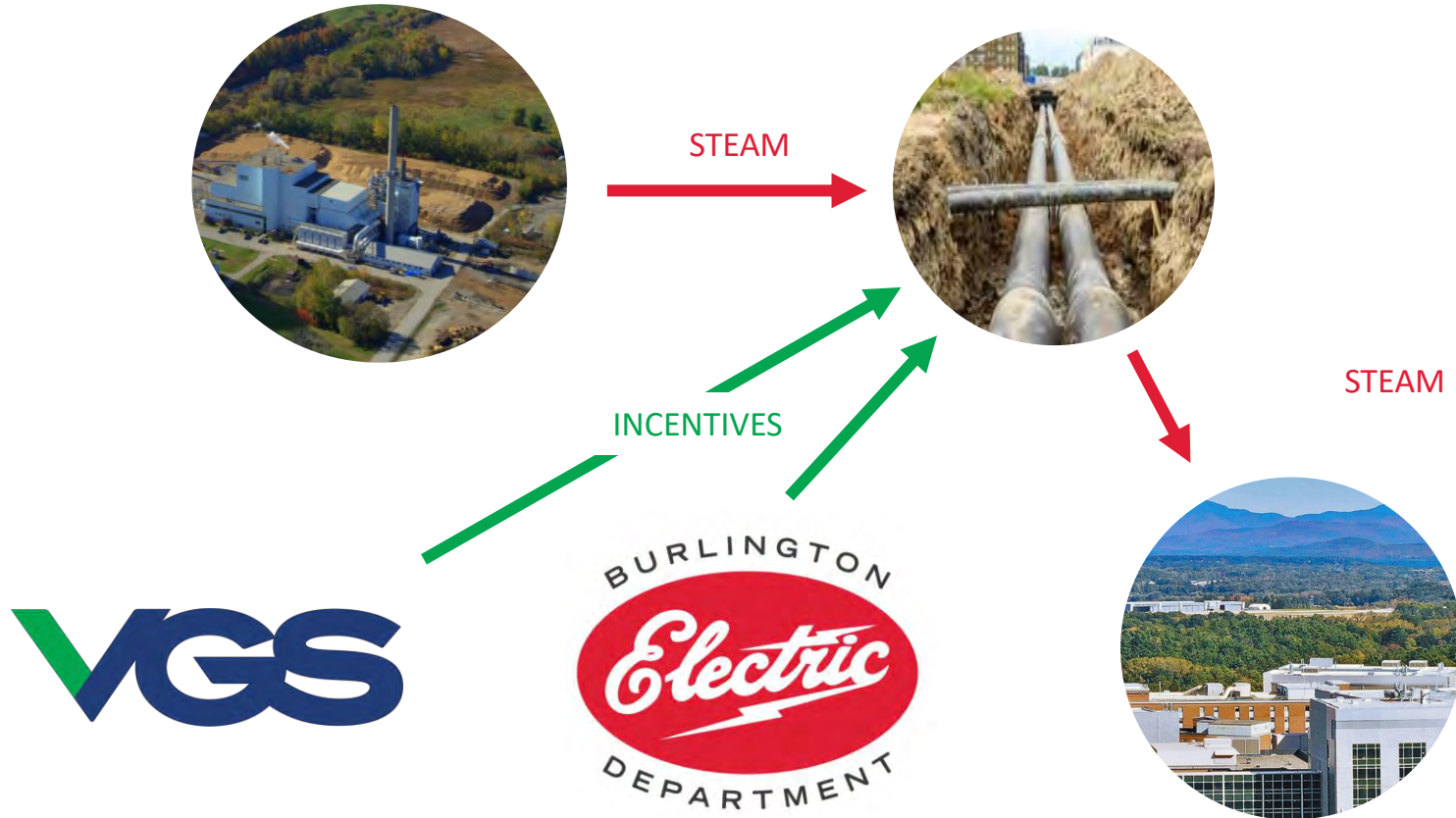
- Capital investment fully financed through Burlington District Energy non-profit, zero taxpayer or ratepayer financing, zero general fund dollars;
- BED and VGS provide incentives under State programs:
 - BED will use Tier III credits under Renewable Energy Standard
 - VGS will use Clean Heat credits under recently-passed Affordable Heat Act
- Burlington District Energy manages construction and operation of project;
- UVM Medical Center purchases the renewable steam and receives the renewable attributes.



Key Operational Terms

- No expansion of McNeil's energy generation capacity, no change in how McNeil is dispatched (continues to run based on electric market pricing), no change in McNeil's wood procurement needs;
- A flue gas economizer would be installed at McNeil to capture and utilize waste heat;
- A supplementary electric boiler would be installed at McNeil to provide steam when cost-effective when McNeil is offline, and to serve as a back-up;
- UVM Medical Center retains its existing systems and can run them when McNeil and electric boiler are offline.

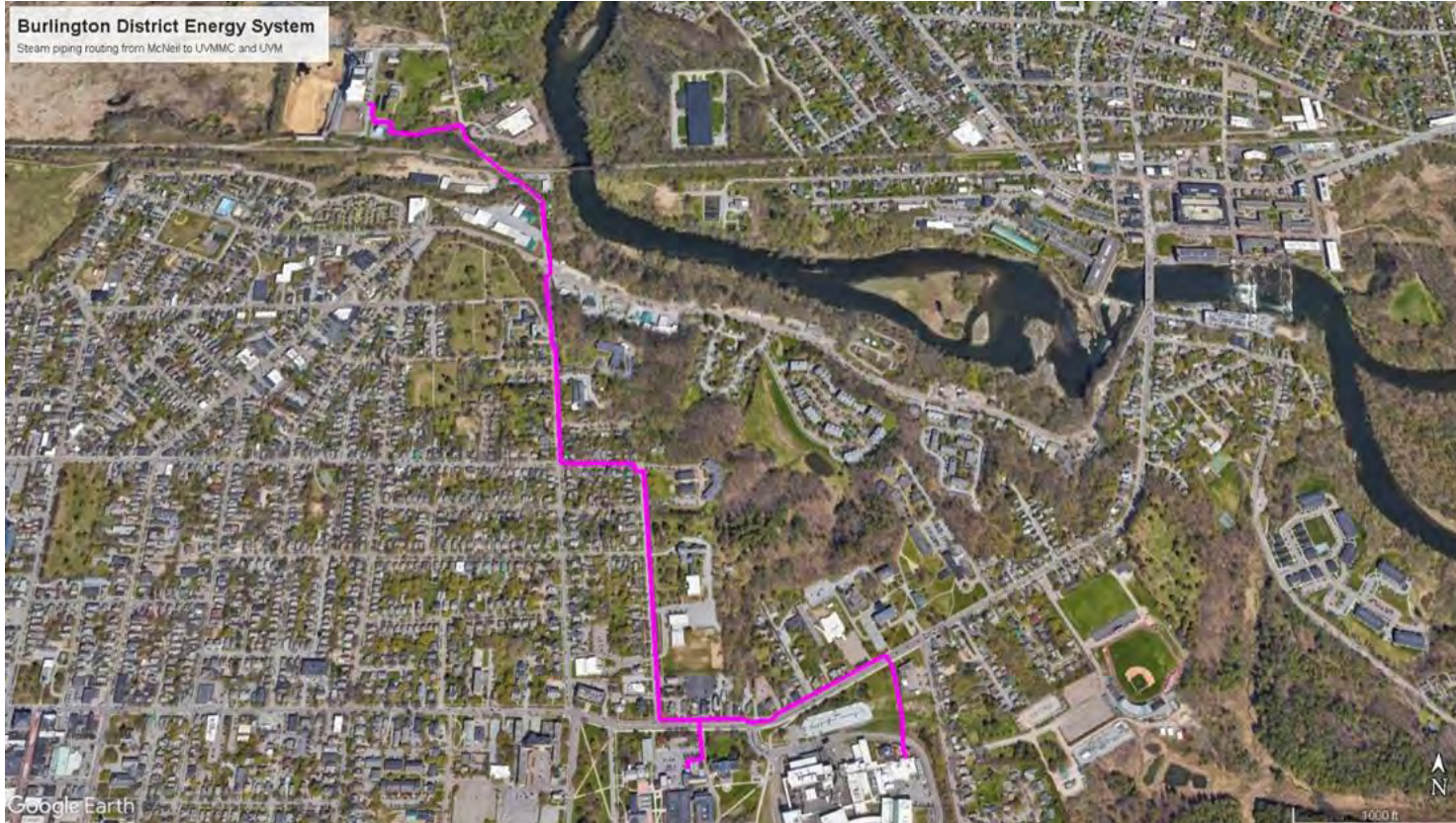
Burlington District Energy System Business Model





Burlington District Energy System

Steam piping routing from McNeil to UVM and UVM



- Intervale Road to North Prospect
- North Prospect to North Street
- North Street to Mansfield Ave.
- Mansfield Ave. to Colchester Ave.



McNeil District Energy Reduces GHG Emissions Over 95% Compared to Fossil Gas

A carbon score evaluates the life-cycle carbon emissions related to the use of a particular energy source. The score measures intensity, which means a common unit of energy is used across all measurements so that they are comparable to one another. The unit use to measure carbon intensity is grams of carbon dioxide-equivalent per megajoule of energy. You may see this abbreviated as g Co2e/MJ. Carbon dioxide equivalencies allow for a common unit of measure across various greenhouse gases that have different climate impacts.

The GREET model was developed by Argonne National Laboratory to estimate life cycle carbon emissions for a wide variety of energy sources and uses. It is continually updated by the Lab and is used by many State governments to measure carbon intensity under emissions reduction regulations. First Environment was retained by VGS to estimate carbon intensity for McNeil and the proposed district energy system using the GREET model. Their modeling assumes that steam energy displaces the use of natural gas for customers of the system. Results of initial modeling:

Fuel	CI Score (g Co2e/MJ)
Fossil Gas	79
McNeil Steam	3.76
Electric Steam (BED Portfolio)	0.039

*Note that the natural gas score above is an approximation of carbon intensity on a life cycle basis, meaning that it includes the use of energy in production, transportation and distribution, and accounts for both emissions from combustion and from fugitive emissions like leaks.

<https://www.burlingtonelectric.com/wp-content/uploads/CI-Model-Letter-Report-draft-ver-3.pdf>



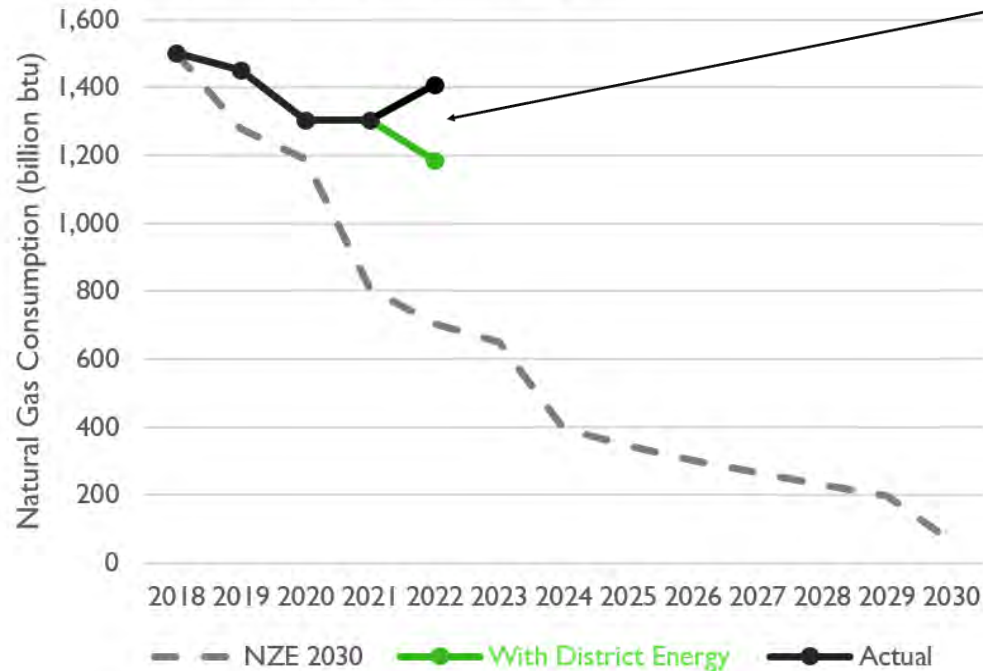
Items for Council Review

- **BED Term Sheet to Provide Steam and use of McNeil Site –**
 - McNeil to provide steam when it runs, add flue gas economizer to capture and use waste heat;
 - No change to McNeil dispatch, no expansion of boiler or plant energy generating capacity;
 - Infrastructure connections to district energy system, allow district energy system to add and operate supplementary electric boiler
- **BED Term Sheet for Incentives for Project –** Flat incentive of \$665,000 per year under Tier 3 program, provided project operates and reduces fossil fuel use as expected. Commensurate dollar per MWH equivalent with other BED incentive programs. No change to existing electrification incentive funding. No ratepayer or taxpayer financing.
- **Easement at 99 Intervale –** Rendering in materials posted
- **Franchise Agreement for Burlington District Energy non-profit –** Drafting by DPW, City Attorney



Net Zero Energy Roadmap Commercial Sector Natural Gas Use *With Burlington District Energy*

Commercial Natural Gas Consumption



16 % REDUCTION



*FY 2024
Financial Review
August*

October 2, 2023

Burlington Electric Department Financial Review

FY 2024

Table of Contents:

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FINANCIAL HIGHLIGHTS – BUDGET VS ACTUAL as of AUGUST FY24

(\$000)	Full Yr	CURRENT MONTH			YEAR TO DATE		
	Budget	Budget	Actual	Variance	Budget	Actual	Variance
Sales to Customers	53,110	4,919	4,644	(275)	10,113	9,905	(208)
Other Revenues	3,775	308	232	(76)	642	362	(280)
Power Supply Revenues	8,244	2,440	2,351	(89)	2,440	2,351	(89)
Total Operating Revenues	65,130	7,668	7,228	(440)	13,195	12,618	(577)
Power Supply Expense (Net)	33,880	3,181	2,835	346	6,452	5,817	635
Operating Expense	22,846	1,955	2,062	(107)	3,855	3,535	320
Depreciation & Amortization	6,630	552	545	8	1,105	1,045	60
Taxes	3,369	295	295	0	580	581	(1)
Sub-Total Expenses	66,725	5,984	5,737	247	11,992	10,978	1,014
Operating Income	(1,595)	1,684	1,491	(193)	1,203	1,640	437
Other Income & Deductions	5,044	280	522	242	717	920	203
Interest Expense	3,166	267	260	7	535	521	14
Net Income (Loss)	283	1,698	1,754	57	1,385	2,038	653

Year-to-Date Results:

- **Sales to Customers** down \$207,700 (2%). Residential Sales down \$90,200 and Non-Residential Sales down \$118,300.
- **Other Revenues** down \$280,000 (43.7)
 - a. DSM billable (customer driven).
- **Power Supply Revenues** down \$89,000 (4%)
 - a. McNeil REC revenue of \$1,538,000 compared to a budget of \$1,447,000.
 - b. Wind REC revenue of \$593,000 compared to a budget of \$769,000.
 - c. Hydro REC revenue of \$221,000 compared to a budget of \$224,000.
- **Power Supply Expenses (Net)** down \$635,000 (10%)
 - a. Purchased Power down \$506,000.
 - b. Transmission down, \$97,000.
 - c. Fuel down \$33,000.
- **Taxes**
 - a. Actual Payment in Lieu of Tax (PILOT) will be \$27,000 higher than budget assumption for the year.
- **Operating Expenses** down \$320,000 (8.3%)
 - a. Various operating expense items are less than budget including labor & overtime (\$34,000), DSM (rebates & outside services) (\$155,100), materials & supplies (\$77,000), A&G Clearing (\$71,600) and RPS Compliance (\$52,600).
- **Other Income & Deductions** higher \$203,000 (28.3%)
 - a. Timing of jobbing unfavorable \$35,800.
 - b. Actual includes unrealized gain on investment \$113,200.
 - c. Retirements budgeted in August (\$135,000) have not happened.

FINANCIAL HIGHLIGHTS – BUDGET VS ACTUAL as of AUGUST FY24

Capital Spending – August YTD (\$000s)				
Plant Type	Full Yr. Budget	Budget	Actual	% Spent
Production	\$2,038	\$583	\$277	14%
Other	415	16	13	3%
Distribution	7,166	407	396	6%
General	1,343	150	888	66%
Total	\$10,963	\$1,156	\$1,574	14%

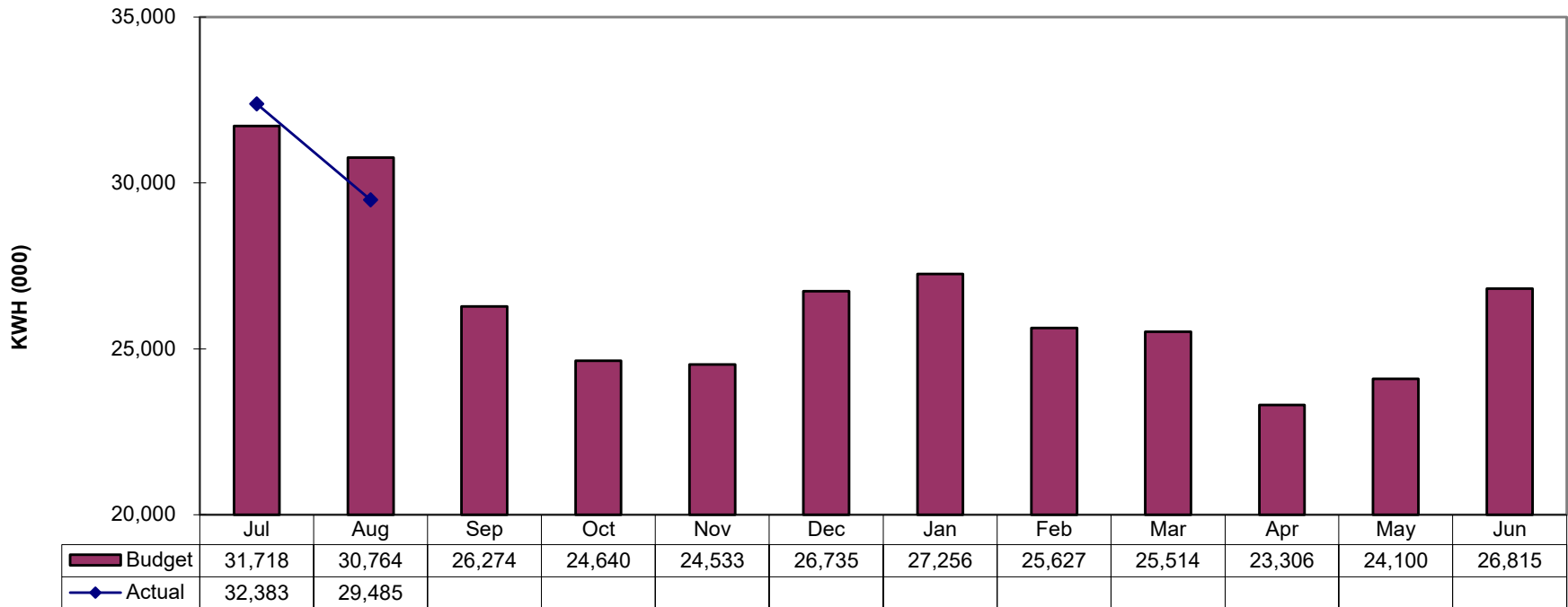
- (1) **Production** – Timing of turbine control system upgrade at McNeil plant, \$124,900 and various projects at Winooski One Hydro, \$149,000.
- (2) **Other** – Timing; actual includes spending on Public Level 2 EV chargers.
- (3) **Distribution** – Timing of various projects.
- (4) **General** – Actual includes full cost of the all-electric bucket truck. Awaiting partial reimbursement from the state grant.

As of August 31, 2023 Operating Cash and Investments	
Operating Funds	\$3,489,300
Operating Fund – CDs	\$975,800
Total Operating Cash	\$4,465,100

Credit Rating Factors – August 2023				
	"A"	"Baa"	Current	3 Year Average
Debt Service Coverage Ratio	1.25	1.25	4.05	3.84
Adjusted Debt Service Coverage Ratio	1.50	1.10	1.40	1.06
Cash Coverage - Days Cash on Hand	90	30	105	113

**Burlington Electric Department
Fiscal Year Ending June 30, 2024**

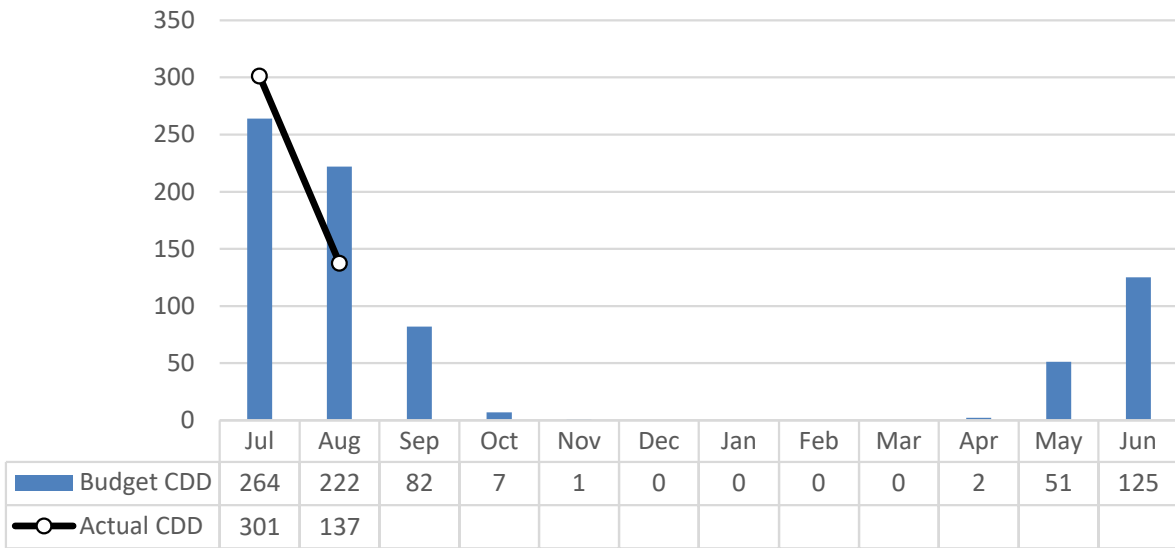
**Total Sales to Customers - KWH
Monthly**



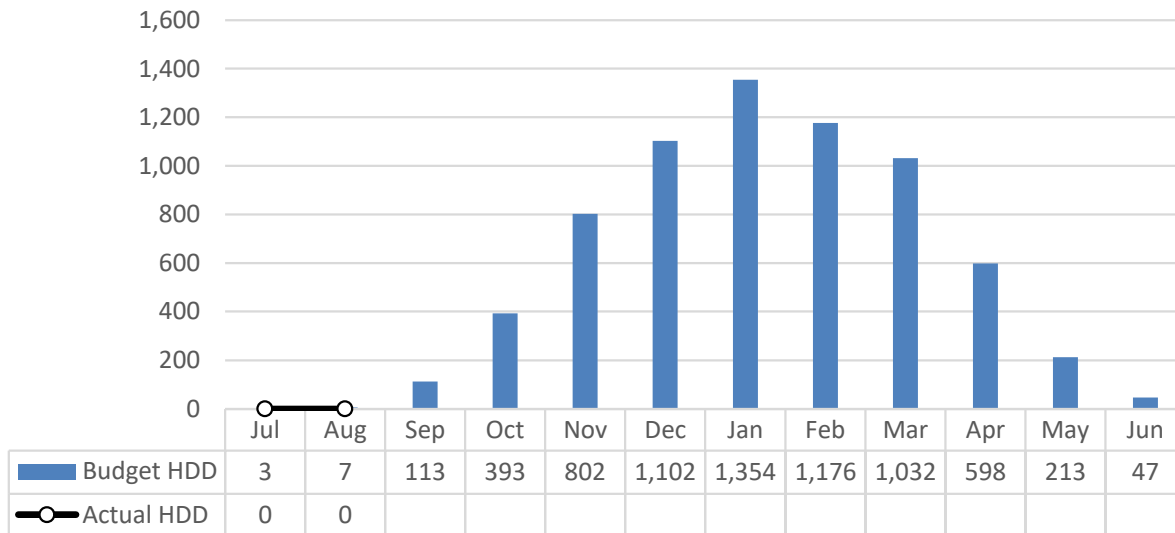
KWH Sales to Customers (YTD)												
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Budget	31,718	62,482	88,756	113,397	137,930	164,665	191,921	217,547	243,061	266,367	290,468	317,283
Actual	32,383	61,868										

FY 2024

Cooling Degree Days (CDD)



Heating Degree Days (HDD)

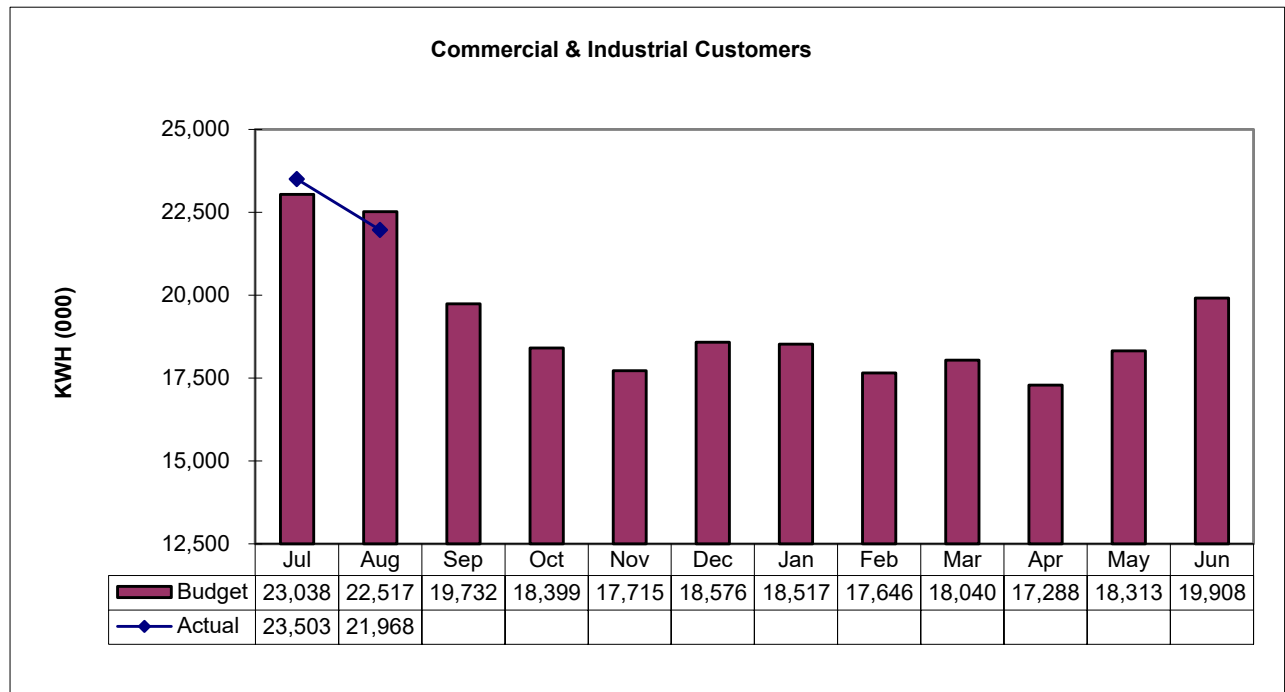
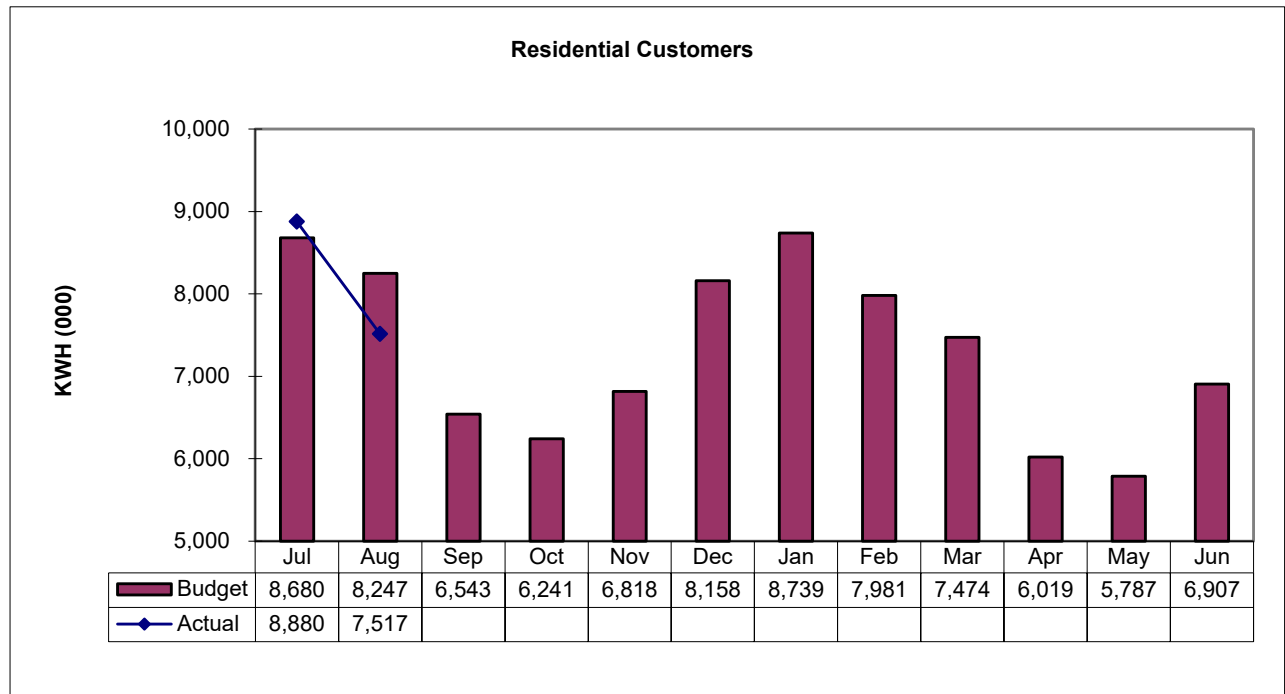


Average Monthly Temperature

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Budget	73	72	64	52	39	29	22	23	32	45	59	67
Actual	74	69										

CDD/HDD definition per National Weather Service: Degree days are based on the assumption that when the outside temperature is 65°F, we don't need heating or cooling to be comfortable. Degree days are the difference between the daily temperature mean (high temperature plus low temperature divided by two) and 65°F. If the temperature mean is above 65°F, we subtract 65 from the mean and the result is Cooling Degree Days. If the temperature mean is below 65°F, we subtract the mean from 65 and the result is Heating Degree Days.

**Burlington Electric Department
Fiscal Year Ending June 30, 2024
KWH Sales**



Street Lighting is included with Commercial & Industrial Customers.

Net Power Supply Costs **August - FY 2024**

	(\$000)						
	Current Month				Year-to-Date		
	Budget	Actual	Variance		Budget	Actual	Variance
Expenses:							
Fuel (p. 7)	\$975	\$646	\$329	(1)	\$1,958	\$1,925	\$33 (1)
Purchased Power (p.11)	1,386	1,368	18	(2)	2,808	2,302	506 (2)
Purchased Power Adjustment (p 11)	43	43	(0)		87	87	(0)
Transmission Fees - ISO	708	708	0		1,353	1,274	79 (3)
Transmission Fees - Velco	10	32	(21)	(3)	126	132	(6)
Transmission Fees - Other	58	37	21	(4)	121	98	24 (4)
Total Expenses	3,181	2,835	346		6,452	5,817	635
Revenues:							
Renewable Energy Certificates - McNeil	1,447	1,538	91		1,447	1,538	91
Renewable Energy Certificates - Wind	769	593	(176)		769	593	(176)
Renewable Energy Certificates - Hydro	224	221	(3)		224	221	(3)
Renewable Energy Certificates - Other	0	0	0		0	0	0
Total Revenues	2,440	2,351	(89)	(5)	2,440	2,351	(89) (5)
Net Power Supply Costs	\$741	\$483	\$257		\$4,012	\$3,466	\$546
Load (MWh)	31,564	29,657	(1,907)		64,097	62,976	(1,121)
\$/MWh	\$23.47	\$16.30	(\$7.17)		\$62.59	\$55.04	(\$7.55)

Current Month:

(1) See detail on page 7.

(2) See detail on page 11.

(4) VELCO Common Charges over Budget.

(4) NYPA NYISO Transmission charges under Budget.

(5) REC Sales projected to be 4% under Budget due to lower McNeil production in calendar year 2023.

YTD:

(1) See detail on page 7.

(2) See detail on page 11.

(3) Network Load under Budget.

(4) NYPA NYISO Transmission charges under Budget.

(5) REC Sales projected to be 4% under Budget due to lower McNeil production in calendar year 2023.

Net Power Supply Costs
August - FY 2024

	(\$000)							
	Current Month				Year-to-Date			
	Budget	Actual	Variance		Budget	Actual	Variance	
<u>FUEL:</u>								
McNeil:								
Fuel Consumed	675	420	255	(1)	1,351	1,345	6	(1)
Swanton Yard	62	55	7	(1)	118	160	(42)	(1)
Train Deliveries	130	88	42	(1)	248	239	10	(1)
Labor & Other Expenses	85	58	27	(2)	200	136	63	(2)
Total McNeil Fuel	952	621	331		1,917	1,880	37	
Gas Turbine	24	26	(2)	(3)	41	46	(5)	(3)
Total Fuel	975	646	329		1,958	1,925	33	

Current Month:

(1) McNeil production 39% under Budget. Wood Price per Ton 3% over Budget. (p. 9)

(2) Actual labor is based on tonnage consumed by McNeil; budgeted labor is based on personnel/days in the month, thus timing issues for comparative purposes.

(3) GT production (62 MWh) 30% over Budget.

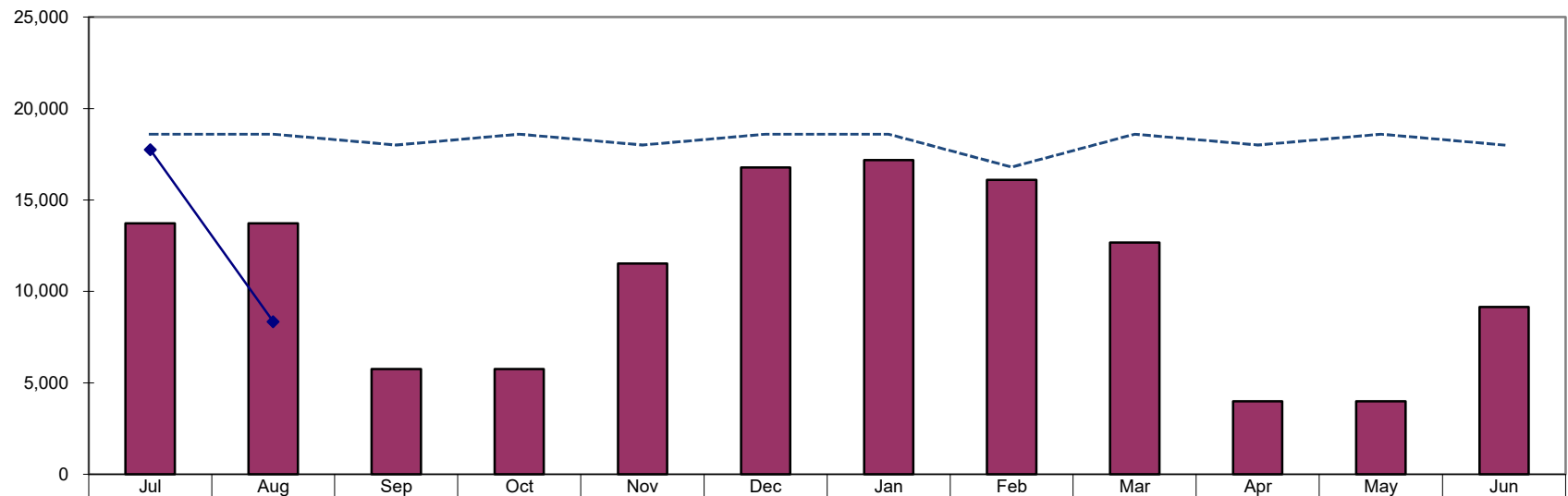
YTD:

(1) McNeil production 5% under Budget. Wood Price per Ton 4% over Budget. (p. 9)

(2) Actual labor is based on tonnage consumed by McNeil; budgeted labor is based on personnel/days in the month, thus timing issues for comparative purposes.

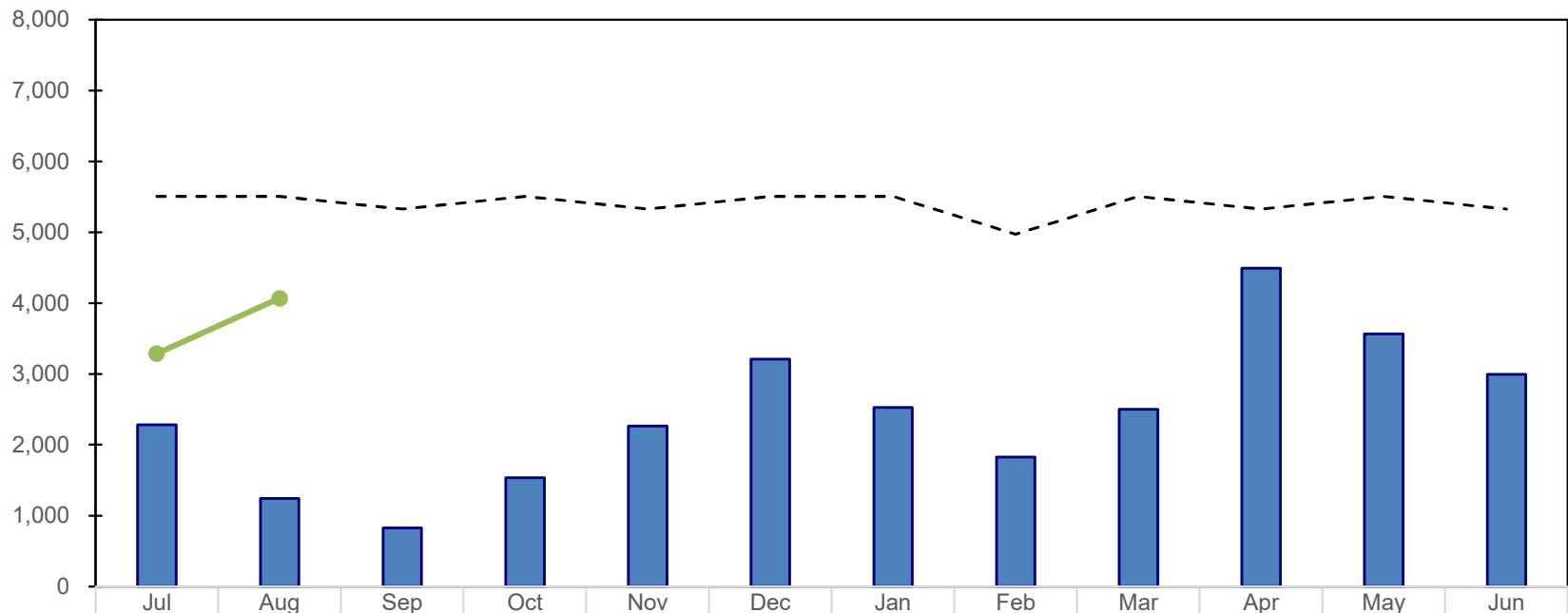
(3) GT production (105 MWh) 25% over Budget.

**Burlington Electric Department
McNeil Plant - MWH Production (50%)
FY 2023**



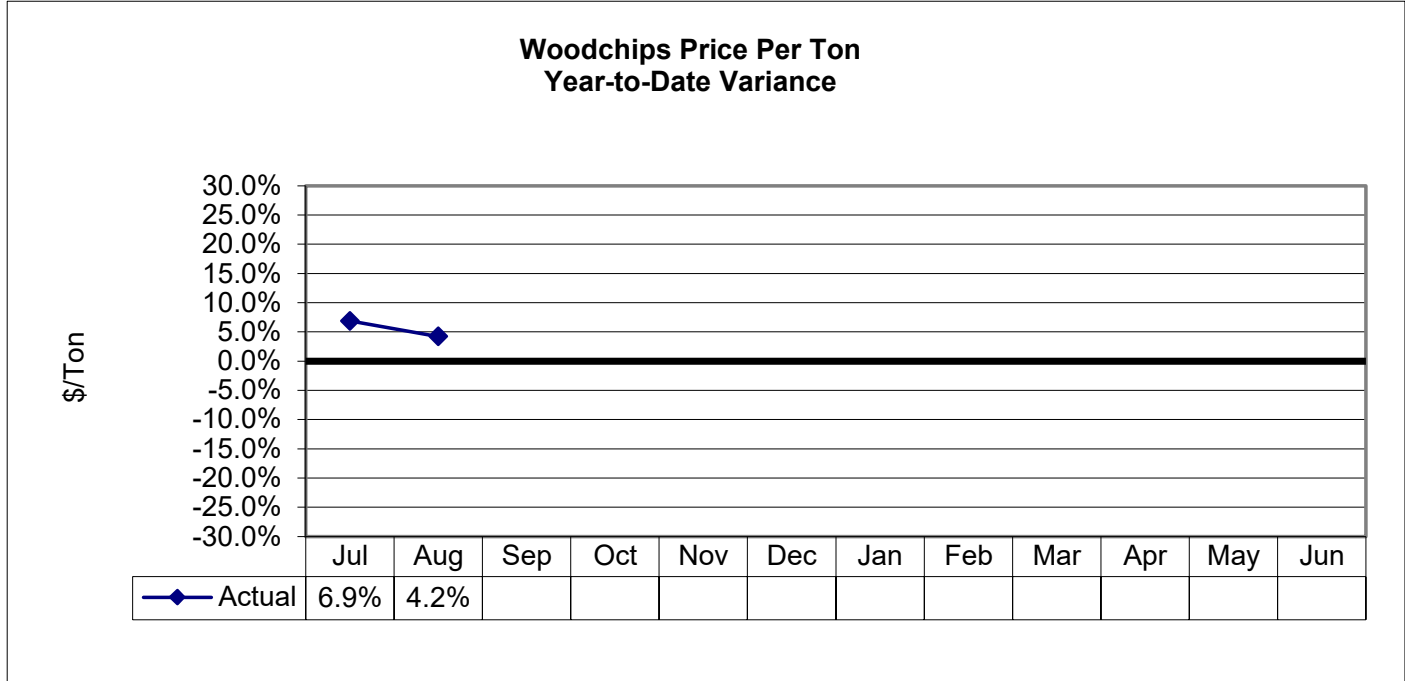
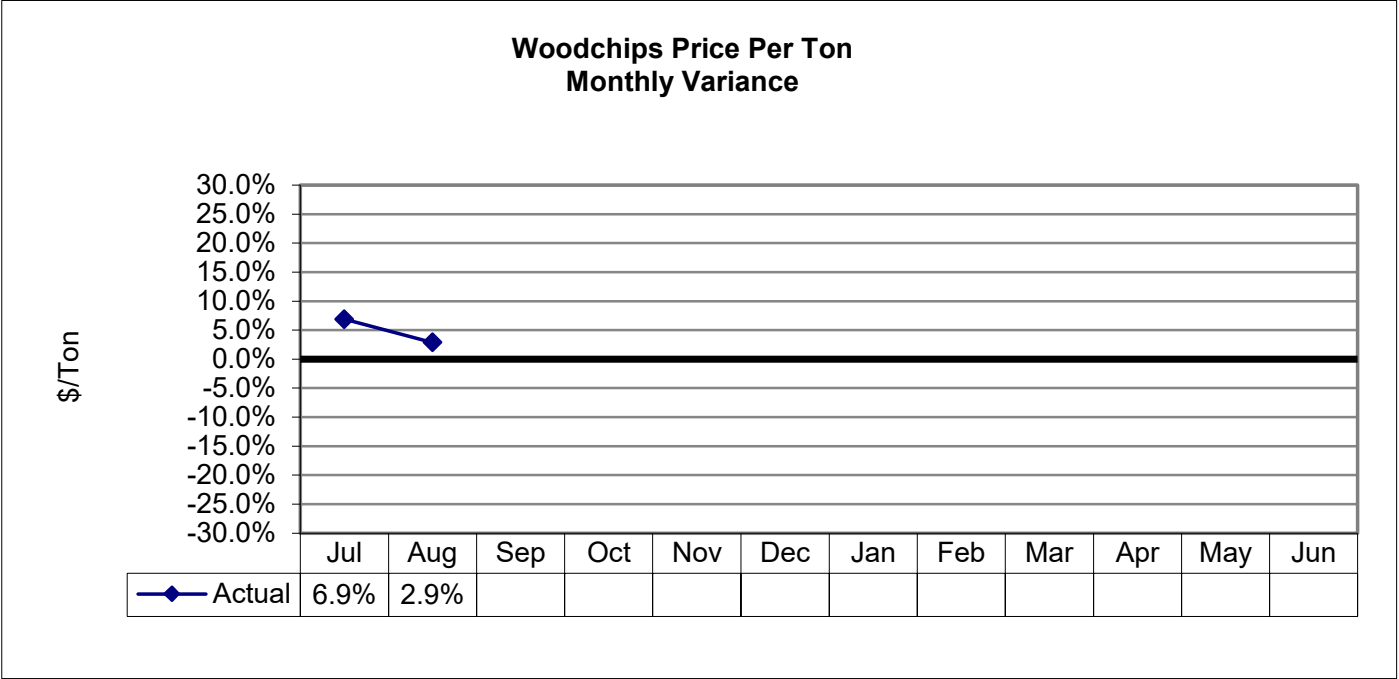
 Budget	13,721	13,721	5,764	5,764	11,529	16,785	17,185	16,113	12,671	3,993	3,993	9,152
 Actual	17,749	8,344										
 Maximum	18,600	18,600	18,000	18,600	18,000	18,600	18,600	16,800	18,600	18,000	18,600	18,000

**Burlington Electric Department
Winooski One - MWH Production
FY 2024**



■ Budget	2,281	1,243	830	1,538	2,263	3,210	2,526	1,829	2,500	4,494	3,568	2,996
—●— Actual	3,285	4,068										
- - - Maximum	5,506	5,506	5,328	5,506	5,328	5,506	5,506	4,973	5,506	5,328	5,506	5,328

Burlington Electric Department Fiscal Year 2024



* Wood only. Does not include other costs.

**Net Power Supply Costs
August - FY 2024**

	(\$000)						
	Current Month			Year-to-Date			
	Budget	Actual	Variance	Budget	Actual	Variance	
<u>PURCHASED POWER:</u>							
Non-Energy (capacity)	111	101	10	(1)	222	172	50 (1)
Energy:							
Georgia Mountain Wind	217	250	(33)	(2)	414	412	2
Hancock Wind	132	182	(50)	(3)	266	259	7
VT Wind	123	156	(33)	(4)	247	251	(4)
Hydro Quebec	293	293	0		585	585	0
Great River Hydro	176	176	0		352	351	1
In City Solar Generators	100	88	12	(5)	215	175	40 (2)
NYP&A	6	8	(1)		12	14	(2)
ISO Exchange	117	27	90	(6)	282	(94)	376 (3)
ISO Exchange Adjustment	43	43	(0)	(**)	87	87	(0) (**)
Velco Exchange	0	(0)	0		0	(1)	1
Total Energy	1,208	1,222	(14)		2,461	2,040	421
Ancillary Charges	(57)	31	(88)	(7)	(129)	75	(203) (4)
Miscellaneous	167	58	110	(8)	340	102	238 (5)
Total Purchased Power Expense	1,429	1,412	18		2,894	2,389	506

Special Note ()**

Adjustment to reduce expense and create regulatory asset by amount of ISO Exchange excess winter energy revenue shortfall (\$4,162,233) and record one-eighth (\$520,279) as amortization in FY24.

Current Month:

- (1) Mystic Costs under Budget.
- (2) Production 15% over Budget.
- (3) Production 38% over Budget.
- (4) Production 27% over Budget.
- (5) Production under Budget.
- (6) Production (Wind (26%) and Winooski One (227%)) over budget. Energy prices under Budget.
- (7) Forward Reserves provided by GT below Budget.
- (8) Timing: REC Expense reported quarterly, budgeted monthly.

YTD:

- (1) Mystic Costs under Budget.
- (2) Production under Budget.
- (3) Winooski One Production (109%) over budget. Energy prices under Budget.
- (4) Forward Reserves provided by GT below Budget.
- (5) Timing: REC Expense reported quarterly, budgeted monthly.

Burlington Electric Department
Operating and Maintenance Expense by Spending Category
FY 2024 - August YTD

	Budget	Actual	Variance	% Variance	*
Labor-Regular	1,496,126	1,473,943	22,183	1%	
Labor-Overtime	82,534	70,691	11,843	14%	
Labor-Temporary	16,200	13,372	2,828	17%	
Labor-Overhead	571,156	583,945	(12,789)	2%	a
Outside Services	495,065	512,413	(17,348)	4%	
DSM (rebates & outside services)	349,072	193,981	155,091	44%	b
Materials & Supplies	185,743	108,745	76,998	41%	c
Insurance	127,612	125,403	2,209	2%	
A & G Clearing	(78,423)	(150,016)	71,593	91%	d
Other - RPS Compliance	159,717	107,140	52,577	33%	
Other	449,994	496,122	(46,128)	10%	
Operating & Maintenance Expense	3,854,795	3,535,739	319,056	8%	

(a) See page 13.

(b) Projects are driven almost entirely by customer decisions. The budget is based on information on specific projects or seasonal variations; otherwise the amount is spread evenly across the year.

(c) Timing; McNeil Plant (\$30,800), Generation-GT/W1 (\$9,600) & Safety/Environmental (\$15,500).

(d) The credit for A&G ("Admin and General Expenses") charged to Capital projects was higher than planned. This will be adjusted in September.

**Burlington Electric Department
Budget vs Actual Spending Analysis
FY 2024 - August YTD**

Labor - Overhead	Budget	(000's)		%	
		Actual	Variance		
Pension	\$303	\$284	\$18	6%	(a)
Medical Insurance	267	299	(32)	-12%	(b)
Social Security Taxes	174	161	13	8%	(a)
Workers Compensation Ins.	60	57	3	5%	(b)
Dental Insurance	14	14	0	2%	(b)
Life Insurance	3	3	0	8%	(b)
	\$821	\$818	\$3	0%	

Rates Table:		Budget
Pension		13.33%
Social Security		7.65%

(a) Function of labor cost.

Includes pension per Actuarially Determined Employer Contribution (ADEC), \$1,728,700 and amortization of IBEW Pension back payment, \$87,041.

(b) Budget provided by the City during budget development.

Net Income
FY 2024 - August (\$000)

		Current Month			Year - To - Date		
	Ref	Budget	Actual	Variance	Budget	Actual	Variance
Operating Revenues							
Sales to Customers	p.3	4,919	4,644	(275)	10,113	9,905	(208)
Other Revenues		308	232	(76) (a)	642	362	(280) (a)
Power Supply Revenues	p.6	2,440	2,351	(89)	2,440	2,351	(89)
Total Operating Revenues		<u>7,668</u>	<u>7,228</u>	<u>(440)</u>	<u>13,195</u>	<u>12,618</u>	<u>(577)</u>
Operating Expenses							
Fuel	p.6	975	646	328	1,958	1,925	33
Purchased Power	p.6	1,429	1,411	17	2,894	2,389	505
Transmission	p.6	776	776	0	1,600	1,504	96
Operating and Maintenance	p.12	1,955	2,062	(107)	3,855	3,535	320
Depreciation & Amortization		552	545	8	1,105	1,045	60
Revenue Taxes		65	61	4	120	112	7
Property Taxes Winooski One		42	43	(1)	84	85	(0)
Payment In Lieu of Taxes		188	191	(3) (b)	376	385	(8) (b)
Total Operating Expenses		<u>5,983</u>	<u>5,735</u>	<u>246</u>	<u>11,992</u>	<u>10,979</u>	<u>1,013</u>
Other Income and Deductions							
Interest/Investment Income		41	51	10	82	91	9
Dividends		367	367	0	734	734	0
Customer Contributions/Grant Proceeds		10	10	0	20	12	(8) (c)
Gain/(Loss) on Disp of Plant		(135)	(0)	135 (c)	(135)	(0)	135 (d)
Other		(3)	94	97 (d)	17	84	67 (e)
Total Other Income & Deductions		<u>280</u>	<u>522</u>	<u>242</u>	<u>717</u>	<u>920</u>	<u>203</u>
Interest Expense		267	260	7	535	521	14 (g)
Net Income		<u><u>1,698</u></u>	<u><u>1,754</u></u>	<u><u>57</u></u>	<u><u>1,385</u></u>	<u><u>2,038</u></u>	<u><u>653</u></u>

Current Month:

- (a) Energy Efficiency Program cost reimbursement was lower than planned, \$69,700.
(b) Actual Payment in Lieu of Tax (PILOT) is higher than budget assumption by \$26,960 for the year.
(c) Timing. Budgeted in August, December, February & June.
(d) Timing of jobbing favorable \$43,000 and unrealized gain on investment \$53,000.

Year - To - Date:

- (a) Energy Efficiency Program cost reimbursement was higher than planned, \$266,700.
(b) See current month.
(c) Budget assumed customer contributions for overhead/underground billable, \$20,000. Actual includes billable for overhead/underground projects, \$8,100 and grant proceeds, \$3,800.
(d) See current month.
(e) Timing of jobbing unfavorable, \$35,800. Offset by unrealized gain on investment, \$113,200.

**Burlington Electric Department
Capital Projects - FY24**

	\$000			
	Full Year Budget	Budget	August YTD Actual	Variance
McNeil (BED 50% Share)				
Turbine Control System Upgrade/Insurance (314)	250	125	1	124
Routine Station Improvements ¹	186	37	1	37
Wood Handling Front End Loader (316)	183	183	175	8
Fuel Oil Tank Replacement Containment Area (312)	125			0
ESP Transformer Rectifier Controls Upgrade (312)	125			0
B-Belt Replacement	72		0	(0)
Freight Elevator Geared Equip & Controls (311)	40			0
Replacement Rail Cars (392)	38			0
Polisher Beads (312)	30			0
Augers Replaced (312)	30			0
McNeil Replacement Pickup Truck (all electric)	28			0
Cooling Tower Timber Replacement (314)	25			0
Safety Valve Replacements (312)	25	2		2
Belt Fire Suppression/Insurance (312)	20			0
Bottom Ash Conveyor	17			0
Ash Conveyor Rebuild (312)	12			0
Air Dryer (312)	12			0
Analyzer Upgrades for Chemical Treatment (312)	9			0
Station Tools & Tool Boxes (312)	7			0
End of Life Handheld Radio Replacement (316)	7	2		2
Continuous Emissions Monitoring Repl/Upgrade			60	(60) (a)
Other	20	2	0	2 (b)
Total McNeil Plant	1,262	351	237	114

(a) Prior year project.

(b) Budget includes rigging equipment, gas burner upgrade, chemical pump replacement, energy efficiency improvements, furniture & equipment cameras.

Hydro Production	<u>318</u>	<u>150</u>	<u>1</u>	<u>149</u>
Gas Turbine	<u>458</u>	<u>81</u>	<u>39</u>	<u>42</u>
Total Production Plant	<u>2,038</u>	<u>583</u>	<u>277</u>	<u>305</u>
Other				
Direct Current Fast Charger (new locations)	281		1	(1)
EV Charger Installation (Level 2)	108	11		11
Policy & Planning Research & Dev	26	5	1	5
Public Level 2 EV Charges			12	(12)
Total Other	<u>415</u>	<u>16</u>	<u>13</u>	<u>3</u>

**Burlington Electric Department
Capital Projects - FY24**

	\$000			
	Full Year Budget	Budget	August YTD Actual	Variance
Distribution Plant-General				
Aerial				
Pole Inspection & Replacement	161		3	(3)
Pole P2296 Replacement Flynn Avenue	57			0
Rebuild Austin Dr	68	14	23	(10)
Replace 2L5 Circuit from P2349-913S	935			0
Rock Point Bridge Guy Wire Relocation (Rock Pt)	40			0
Sunset Cliff Rebuild	53	13	8	5
Total Aerial	1,314	27	34	(8)
Underground				
Install Cables on St Paul St (Bank to Cherry)	86			0
Main St Great Streets	0		4	(4)
Rebuild Ethan Allen Pkwy to 3 Phase	683	205	7	198
Rebuild Summit Ridge	332	33	0	33
Replace 2L5 Circuit from 913S to UH #248	812			0
Replace 322/323/324S (Main St and Univ Hts)	239			0
Switch 305S/325S/326S (Main St Reservoir)	252			0
Switch 709S/710S (Battery St - College & Main)	57			0
Switch 817S/912S/913S (Main St Reservoir)	147			0
Total Underground	2,607	238	11	227
Customer Driven/City Projects				
Champlain Parkway-Billable	269		166	(166)
Champlain Parkway (CAFC)	(229)			0
Main Street Great Streets			3	(3)
Total Underground	40	0	170	(170)
Other				
ADMS Phase 1-SCADA upgrade (Repl SCADA Sys)	724			0
Communication Equipment Emergency Repair	29		3	(3)
Distribution Transformers	631	95	9	86
SCADA Network Switches Replacement	107		8	(8)
SCADA Servers PC's and Monitors	229			0
SCADA Video Display	721			0
Other			6	(6)
Total Other	2,441	95	26	68
Total Distribution Plant-General	6,403	360	242	118

**Burlington Electric Department
Capital Projects - FY24**

	\$000			
	Full Year Budget	Budget	August YTD Actual	Variance
Distribution Plant - Blanket				
Aerial	171	9	26	(17)
Aerial (CAFC)	(65)	(6)	(8)	2
Underground	371	42	52	(11)
Underground (CAFC)	(135)	(13)		(13)
Meters	105	4	2	2
Lighting	228	6	82	(76)
Tools & Equipment - Distribution/Technicians	37			0
Replaces Failed SCADA Field Equipment	23			0
Substation Maintenance	17			0
Gas Detectors	5			0
Pulling Rope Amsteel Blue	7	7		7
Total Distribution Plant - Blanket	763	47	154	(107)
 Total Distribution Plant	7,166	407	396	11
 General Plant				
Computer Equipment/Software	902	95	63	32 (a)
Vehicle Replacement	259		825	(825) (b)
Buildings & Grounds	176	48		48 (c)
AED Purchase	7	7		7
Total General Plant	1,343	150	888	(738)

(a) Budget includes replacement iPads for line crew and Pole Mount Routers. Actual includes IT Forward, \$45,700 and other projects (AS400/CIS upgrade & Pole Mount Routers).

(b) Timing; full year budget includes All Electric Bucket Truck net of grant and two all electric pickup trucks.

(c) Timing; budget includes new gate motor controller, AC replacement GT Computer rooms and Dispatch Center.

Sub-Total Plant	\$10,962	\$1,156	\$1,574	(\$419)
 Add: CAFC* reclass to "Other Income"	428	20	8	12
 Total Plant	\$11,391	\$1,176	\$1,582	(\$407)

* Customer Advances (Contributions) for Construction.

Operating Cash - FY 2024 Monthly Ending Balance

