

NORA Board Meeting Newport Marriott, Salon II Ballroom September 23rd, 2024 10:00 am

Join Zoom Meeting https://us02web.zoom.us/j/83397437940

Meeting ID: 833 9743 7940 One tap mobile 833-974-37940 US

- I. Introduction Chairman Kate Duffey
- II. Approval of Minutes
- III. Financial Information
 - 2023 NORA Audit
 - August 2024 Financials
- IV. Research and Development Director of Laboratory Dr. Thomas Butcher
- V. Education and Training Bob O'Brien
- VI. NORA 2024 Activities President Michael Devine
 - Chevron REG Renewable Diesel Field Study / 2024 2025 heating season
 - NORA Technical Workshop / Tuesday, September 24th
 - SUNY Morrisville Event / Friday, October 4th
 - NORA Plainview Video Shooting / November 11th 13th
 - Conferences Participation / Reporting on upcoming events in 2024
 - o SNEC September 23rd 24th, Newport, RI
 - o Empire State Energy Conference October 2nd 4th, Turning Stone Casino, NY
 - o **EMA Conference** October 5th 7th Las Vegas, Nevada
 - o XBX October 15th, Lancaster, PA
 - o PPA Fall Energy Conference October 15th 17th, Lancaster PA
 - o **Biodiesel Technical Workshop** October 29th 30th Kansas City, Missouri
- VII. Old Business –
- VIII. New Business -
- IX. Adjournment

NORA Board Meeting Mohegan Sun Resort & Casino Earth Ballroom May 20th, 2024 3:30 pm

I. **Introduction** – Chairman Kate Duffey called the meeting to order.

The following members of the NORA Board of Directors were in attendance and constituted a Quorum.

Roger Marran Kate Duffey
Rick Bologna Eric DeGesero
Allison Heaney Mario Bouchard
Dan Mattice Jacqueline Hart
Ted Noonan Claudette Townsend

Gary Sippin Dan Singer
Brent Moore Chris Fazio
Kristyn Schweitzer John McCusker
Bill Reichert Jr. Mark Caspers
Katie Foster Randy Groft
Hal Johnson Levi Bourne

- II. Approval of Minutes A motion was made by Jacqueline Hart and was seconded by Allison Heaney to approve the 9-28-23 Board of Directors Meeting. All approved
- III. Financial Information Cecilia Rubio and Michael Devine provided the Financial report to the NORA Board of directors.
 - Degree Day & Gallons Losses NORA President Michael Devine shred a PowerPoint presentation that showed the loss of degree days over an accelerated time curve to provide some insights into heating oil gallons decline in recent years.
 - Preliminary 2023 Financials NORA President Michael Devine provided an initial look at early 2023 financial statements, these would be updated as the Q4 revenues continued to come into NORA.
 - Q1 2024 Financials Michael provided an initial look at the Q1 2024 financial statements, however he acknowledged that the majority of the Q1 revenues had not yet arrived so this was more of an initial expense review.
- IV. Research and Development Director of Laboratory Dr. Thomas Butcher Dr. Butcher provided the Board of Directors a PowerPoint presentation that highlighted the activities at the NORA Research Center that have taken place since our last meeting and also provided some insights into the projects that the research team would be focused on in 2024.

V.

VI. Education and Training – Bob O'Brien – Bob O'Brien provided a PowerPoint presentation on the expanding education activities that NORA is moving forward with in 2024. Additionally, Bob touched base on the next phase of activities in 2024 for the IECC, he has created a Codes Committee at NORA so that there is a larger and more diverse dialog regarding codes for liquid heating equipment and fuels as the process unfolds.

VII. NORA 2024 Activities – President Michael Devine

- 131 East Ames Ct. Expansion and New Term Lease The discussions with the landlord for 131 East Ames Court the NORA research center are progressing well. They have continued to honor our square footage price for the additions that we have proposed maintaining the \$25.14 per square foot price. We are currently paying \$95,196 per year in rent for 3786 ft.², the additional space would increase to \$136,212 for 5,927 ft.². While we are increasing our square footage from of the research center, providing the BPI certification, we expect that we will be able to cover the increased rent through charging the BPI programs on a moving forward basis.
- DCAS Meeting April 4th April 4 On April 4, NORA hosted the DCAS team at the NORA research and educational center on Long Island. Those in attendance in the meeting included the NORA team, Scott Fenwick Technical Director of Clean Fuels Alliance America, the Preferred Utilities, senior management team and representatives from DCAS and other agencies in New York City. The discussions were very productive and all parties felt very comfortable of where the roadmap could lead us as far as decarbonizing the New York City municipal buildings some of our takeaways and follow up items included, highlighting and clarifying the role of renewable diesel and reducing harmful and toxic aromatics in regular diesel The workplace health and safety benefits and understanding the air quality and GHC lifestyle analysis of renewable fuels.

NORA has responded with the assistance of Clean Fuels and providing the studies and white papers and we are continuing to forward materials that we believe will be beneficial to DCS in this transition process . The goals are to transfer 30,000,000 gallons of number four and number two heating oil to 100% renewable liquid heating fuels.

- Chevron REG RFP NORA was approached by Chevron REG to gauge our interest in providing a Request for Proposal for a Renewable Diesel & Biodiesel blend field study in Massachusetts and New York. On May 29th NORA will host an initial workshop to explore the concepts with members of the Chevron REG Technical and commercial teams and we have included several liquid heating marketers who are interested in listening and perhaps taking part in this RFP. The goals would be to identify marketers who would allow for 100% renewable liquid fuels to be delivered to some part of their customer base during the 2024 2025 heating season.
- Department of Energy Request for Records On March 29, NORA provided the Department of Energy with the updated report with the items that they had requested. Subsequently, the DOE sent an email acknowledging receipt of the package and informed us that they would be reaching out if they had any questions or needed any additional material.

- VIII. Executive Committee & Officers for 2024 A new slate of Officers, Members of the Executive Committee and Board of Directors were submitted for a vote of approval by the NORA Board of Directors. There were no other nominations from the floor, subsequently Allison Heaney made a motion to approve the names as submitted and Claudette Townsend seconded the motion, there was no further discussions, all members of the Board of Directors voted to approve, there were no objections or and no one abstained.
- IX. Old Business None
- X. New Business None
- XI. Adjournment A motion to adjourn was made by Claudette Townsend and was seconded by Allison Heaney all were in favor and the meeting was adjourned.

NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

DECEMBER 31, 2023 AND 2022

These financial statements may be reproduced only in their entirety

NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

DECEMBER 31, 2023 AND 2022

TABLE OF CONTENTS

| INDEPENDENT AUDITOR'S REPORT | | 1-2 |
|--|----------|-------|
| FINANCIAL STATEMENTS | | |
| Statements of Financial Position | | 3 |
| Statements of Activities | | 4 |
| Statements of Functional Expenses | | 5 |
| Statements of Cash Flows | | 6 |
| Notes to Financial Statements | | 7-15 |
| SUPPLEMENTARY INFORMATION | | |
| Supplemental Schedules of Expenses by State/Juri | sdiction | 16-19 |



INDEPENDENT AUDITOR'S REPORT

The Board of Directors National Oilheat Research Alliance, Inc. Norwalk, Connecticut

Opinion

We have audited the accompanying financial statements of National Oilheat Research Alliance, Inc. (the Alliance, a not-for-profit organization), which comprise the statements of financial position as of December 31, 2023 and 2022, and the related statements of activities, functional expenses, and cash flows for the years then ended, and the related notes to the financial statements.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Alliance as of December 31, 2023 and 2022, and the changes in its net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Alliance and to meet our other ethical responsibilities in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Emphasis of Matter - Adoption of New Accounting Pronouncement

As discussed in Note 10 to the financial statements, the Alliance adopted Accounting Standards Update (ASU) No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments in 2023. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Alliance's ability to continue as a going concern within one year after the date that the financial statements are available to be issued.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with auditing standards generally accepted in the United States of America will always detect a material misstatement when it exists.

The Board of Directors National Oilheat Research Alliance, Inc. Norwalk, Connecticut

Auditor's Responsibilities for the Audit of the Financial Statements (continued)

The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with auditing standards generally accepted in the United States of America, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Alliance's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Alliance's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Supplementary Information

Our audits were conducted for the purpose of forming an opinion on the financial statements as a whole. The Schedules of Expenses by State/Jurisdiction on pages 16-19 for the year ended December 31, 2023, are presented for purposes of additional analysis and are not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

McLean, Virginia the report date

NATIONAL OILHEAT RESEARCH ALLIANCE, INC. STATEMENTS OF FINANCIAL POSITION DECEMBER 31, 2023 AND 2022

ASSETS

| | | 2023 | 2022 |
|---|----|------------|------------------|
| ASSETS | | | |
| Cash and cash equivalents | \$ | 9,212,417 | \$ 9,920,538 |
| Assessments receivable | | 2,424,760 | 2,656,113 |
| Prepaid state assessments | 9 | 1,018 | 27,293 |
| Operating right-of-use asset | | 664,986 | 274,512 |
| Cash held in escrow | | 8,114,766 | 5,944,434 |
| Other assets | | 56,343 | 73,271 |
| TOTAL ASSETS | \$ | 20,474,290 | \$ 18,896,161 |
| LIABILITIES AND NET ASSETS | | | |
| LIABILITIES | | | |
| Accounts payable | \$ | 153,115 | \$ 221,320 |
| Deferred contract revenue | | 375,490 | 272,052 |
| Refunds payable | | 490,229 | 423,646 |
| State grants payable | | 1,970,550 | 2,242,331 |
| Obligation for unallocated state rebates | | 2,868,676 | 2,403,161 |
| Operating lease liability | | 687,625 | 281,314 |
| Other liabilities | | 75,274 | 57,903 |
| Total liabilities | | 6,620,959 | 5,901,727 |
| AVER LOGERES | | | |
| NET ASSETS Net assets without donor restrictions available for obligation - other than | | | |
| for consumer education, safety, and training | | 56 271 | 262 041 |
| Designated net assets: | | 56,271 | 263,941 |
| Pre-2014 reauthorization net assets | | 55,933 | 55,933 |
| Unavailable for obligation until October 1, 2028 | | 9,962,430 | 8,042,151 |
| National spending not yet incurred: | | | |
| Research, development, and demonstration - not yet obligated | | 3,214,931 | 4,179,055 |
| Research, development, and demonstration - obligated under contract | | 67,594 | 67,594 |
| Heating oil efficiency and upgrade - not yet obligated | | 230,025 | 192,521 |
| Consumer education, safety, and training - not yet obligated | | 266,147 | 193,239 |
| Total net assets without donor restrictions | | 13,853,331 | 12,994,434 |
| TOTAL LIABILITIES AND NET ASSETS | \$ | 20,474,290 | \$ 18,896,161 |

NATIONAL OILHEAT RESEARCH ALLIANCE, INC. STATEMENTS OF ACTIVITIES FOR THE YEARS ENDED DECEMBER 31, 2023 AND 2022

| | 2023 | 2022 |
|---|---------------|---------------|
| CHANGE IN NET ASSETS WITHOUT DONOR RESTRICTIONS | | |
| REVENUE | | |
| Assessments revenue, net of refunds | \$ 7,209,975 | \$ 8,381,707 |
| Other income | 561,900 | 107,300 |
| Total revenue | 7,771,875 | 8,489,007 |
| EXPENSES | | |
| Program services: | | |
| Research, development, and demonstration | 3,041,576 | 2,673,141 |
| Heating oil efficiency and upgrade | 820,638 | 896,350 |
| Consumer education, safety, and training | 1,554,774 | 1,736,587 |
| Unallocated state rebates | 922,404 | 1,178,557 |
| Total program expenses | 6,339,392 | 6,484,635 |
| Administrative costs | 262,327 | 228,568 |
| General and special projects: | | |
| Assessment and collection costs | 246,501 | 178,435 |
| Annual report costs | 64,758 | 67,831 |
| Total general and special projects | 311,259 | 246,266 |
| Total expenses | 6,912,978 | 6,959,469 |
| CHANGE IN NET ASSETS WITHOUT DONOR RESTRICTIONS | 858,897 | 1,529,538 |
| NET ASSETS, BEGINNING OF YEAR | 12,994,434 | 11,464,896 |
| NET ASSETS, END OF YEAR | \$ 13,853,331 | \$ 12,994,434 |

NATIONAL OILHEAT RESEARCH ALLIANCE, INC. STATEMENTS OF FUNCTIONAL EXPENSES FOR THE YEARS ENDED DECEMBER 31, 2023 AND 2022

2023

| | | | | PF | ROGF | RAM SERVIC | ES | | | | | | | | |
|-------------------------------|----|-------------|----|------------|------|-------------|----|-------------|----|-----------|----|--------------|----|------------|-----------------|
| |] | Research, | Н | eating Oil | (| Consumer | | | | | | | | | |
| | De | evelopment, | Е | fficiency | I | Education, | U | Jnallocated | | Total | | | G | eneral and | |
| | | and | | and | S | Safety, and | | State | | Program | Ad | ministrative | | Special | Total |
| | De | monstration | | Jpgrade | | Training | | Rebates | | Services | | Costs | | Projects | 2023 |
| Grants | \$ | 1,174,414 | \$ | 802,853 | \$ | 1,369,747 | \$ | 922,404 | \$ | 4,269,418 | \$ | - | \$ | - | \$ 4,269,418 |
| Salaries, taxes, and benefits | | 888,574 | | 16,792 | | 46,321 | | - | | 951,687 | | 63,113 | | 33,730 | 1,048,530 |
| Professional fees | | 687,102 | | 993 | | 115,494 | | - | 7 | 803,589 | | 170,101 | | 277,403 | 1,251,093 |
| Occupancy | | 144,230 | | - | | - | | - | | 144,230 | | 2,100 | | - | 146,330 |
| Other expenses | | 147,256 | | - | | 23,212 | | | | 170,468 | | 27,013 | | 126 | 197,607 |
| TOTAL EXPENSES | \$ | 3,041,576 | \$ | 820,638 | \$ | 1,554,774 | \$ | 922,404 | \$ | 6,339,392 | \$ | 262,327 | \$ | 311,259 | \$ 6,912,978 |

2022

| | | PR | OGRAM SERVIC | ES | | | | | | |
|-------------------------------|---------------|-------------|--------------|--------------|-----------------|-----|--------------|----|------------|-----------------|
| | Research, | Heating Oil | Consumer | | | | | | | |
| | Development, | Efficiency | Education, | Unallocated | Total | | | Ge | eneral and | |
| | and | and | Safety, and | State | Program | Adı | ninistrative | | Special | Total |
| | Demonstration | Upgrade | Training | Rebates | Services | | Costs | | Projects | 2022 |
| Grants | \$ 959,941 | \$ 869,848 | \$ 1,549,387 | \$ 1,178,557 | \$ 4,557,733 | \$ | - | \$ | - | \$ 4,557,733 |
| Salaries, taxes, and benefits | 827,900 | 24,166 | 35,419 | - | 887,485 | | 36,350 | | 36,711 | 960,546 |
| Professional fees | 669,331 | 1,450 | 150,354 | - | 821,135 | | 169,594 | | 207,640 | 1,198,369 |
| Occupancy | 84,180 | | - | - | 84,180 | | 2,100 | | - | 86,280 |
| Other expenses | 131,789 | 886 | 1,427 | | 134,102 | | 20,524 | | 1,915 | 156,541 |
| TOTAL EXPENSES | \$ 2,673,141 | \$ 896,350 | \$ 1,736,587 | \$ 1,178,557 | \$ 6,484,635 | \$ | 228,568 | \$ | 246,266 | \$ 6,959,469 |

NATIONAL OILHEAT RESEARCH ALLIANCE, INC. STATEMENTS OF CASH FLOWS FOR THE YEARS ENDED DECEMBER 31, 2023 AND 2022

| | 2023 | | | 2022 |
|---|------|-------------|----|------------|
| CASH FLOWS FROM OPERATING ACTIVITIES | | _ | | _ |
| Change in net assets | \$ | 858,897 | \$ | 1,529,538 |
| Adjustments to reconcile change in net assets | | | | |
| to net change in cash from operating activities: | | | | |
| Operating lease | 4 | 15,837 | | 6,802 |
| Changes in assets and liabilities: | | | | |
| Assessments receivable | | 231,353 | | 41,840 |
| Prepaid state assessments | | 26,275 | | 28,635 |
| Other assets | | 16,928 | | (2,896) |
| Accounts payable | | (68,205) | | 76,152 |
| Deferred contract liability | | 103,438 | | 272,052 |
| Refunds payable | | 66,583 | | 8,494 |
| State grants payable | | (271,781) | | (260,811) |
| Obligation for unallocated state rebates | | 465,515 | | 296,351 |
| Other liabilities | | 17,371 | | (28,957) |
| NET CHANGE IN CASH, CASH EQUIVALENTS, AND CASH | | 1 462 211 | | 1.067.200 |
| HELD IN ESCROW | * | 1,462,211 | | 1,967,200 |
| CASH, CASH EQUIVALENTS, AND CASH HELD IN ESCROW, | | | | |
| BEGINNING OF YEAR | | 15,864,972 | | 13,897,772 |
| CACH CACHEOLINA PRITE AND CACH HELD DIFECED ON | | | | |
| CASH, CASH EQUIVALENTS, AND CASH HELD IN ESCROW, END OF YEAR | \$ | 17,327,183 | \$ | 15,864,972 |
| ENDOTTEM | Ψ | 17,327,103 | Ψ | 13,004,772 |
| SUPPLEMENTAL DISCLOSURE OF NONCASH INVESTING AND FINANCING A | CT. | IVITY: | | |
| Noncash change in operating right-of-use asset | \$ | (390,474) | \$ | (89,623) |
| Noncash change in operating lease liability | \$ | 406,311 | \$ | 86,107 |
| SUPPLEMENTAL BREAKDOWN OF CASH, CASH EQUIVALENTS, AND CASH | HEI | LD IN ESCRO | W: | |
| Cash and cash equivalents | \$ | 9,212,417 | \$ | 9,920,538 |
| Cash held in escrow | Ψ | 8,114,766 | Ψ | 5,944,434 |
| | | 5,111,700 | | |
| Total cash, cash equivalents, and cash held in escrow | \$ | 17,327,183 | \$ | 15,864,972 |

NOTE 1 - THE ORGANIZATION

National Oilheat Research Alliance, Inc. (the Alliance) is a non-profit trade organization developed under *the National Oilheat Research Alliance Act of 2000* (NORA), Public Law 106-469, legislation passed by the United States Congress and signed into law in November 2000. The law was amended in 2014 under Public Law 113-79. The Alliance was created to educate consumers about the benefits of oilheat, to perform research and development, to encourage heating oil efficiency and upgrades, and to provide technical training to the public to provide better customer service. The Alliance's Board consists of members from the oilheat industry, retail markets, wholesale distributors, public members, and representatives from the states with the highest oilheat sales. The Alliance was incorporated on January 31, 2001. Funding under the Public Law 106-469 ceased on February 6, 2010. On February 7, 2014, the Public Law 113-79 extended the provisions of Public Law 106-469 to February 6, 2019. Funding under Public Law 113-79 resumed effective April 1, 2014. On December 20, 2018, Public Law 115-334, *the Agriculture Improvement Act of 2018* was signed. Public Law 115-334 extended and modified the provisions of Public Law 113-79 to February 6, 2029.

Pursuant to Public Law 113-79, Congress established a limit on the use of assessments revenue of 30 percent for consumer education, safety, and training; a minimum of at least 30 percent of assessments revenue for research, development, and demonstration; a minimum of at least 15 percent of assessments revenue for heating oil efficiency and upgrade; and a limit on the use of assessments revenue of 5 percent for administrative costs. Beginning February 6, 2019, Public Law 115-334 increased the limit on administrative costs to 7 percent of assessments revenue. Furthermore, Public Law 115-334 requires in each calendar year beginning February 6, 2019, the Alliance may not obligate an amount greater than the sum of (1) 75 percent of the amount of assessments estimated to be collected in the calendar year; (2) 75 percent of the amount of assessments actually collected in the most recent calendar year for which an audit report has been submitted less the amount estimated in (1) above; and (3) amounts permitted in preceding calendar years to be obligated that have been obligated. The assessments collected in excess of the amounts permitted to be obligated in (1), (2), and (3) above, shall be deposited in an escrow account and be unavailable for use until October 1, 2028, when it can be used consistent with the provisions of Public Law 106-469. In the years ended December 31, 2023 and 2022, the Alliance was in compliance with these percentages. From timeto-time, the Alliance may receive inquiries from government agencies and other organizations, because of the nature of its funding sources. In the year ended December 31, 2023 and subsequent to year-end, the Alliance received such inquiries. Management does not expect the result of such inquiries to impact the financial information of the Alliance.

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting

The financial statements have been prepared on the accrual basis of accounting following the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC), which is the sole source of authoritative accounting principles generally accepted in the United States of America (GAAP). The Alliance reports information regarding its financial position and activities according to two classes of net assets: with donor restrictions and without donor restrictions.

Accounting Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that could affect certain reported amounts of assets, liabilities, revenue, and expenses; the disclosure of contingent assets and liabilities at the date of the financial statements; and functional allocations during the year. Actual results could differ from those estimates.

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

Cash and Cash Equivalents

The Alliance considers all highly liquid investments available for current us with a maturity of three months or less to be cash equivalents. Cash and cash equivalents consist of cash held in bank accounts. The Alliance also has cash held in an escrow account under the requirements of the Public Law 115-334 that is reported separate from cash and cash equivalents in the accompanying statements of financial position.

State Grants Payable and Obligation for Unallocated Rebates

Under Public Laws 113-79 and 115-334 each year, the Alliance makes grant contributions to state organizations to accomplish its mission. Grants are recorded as payables at the beginning of the year when the grant budget estimate is finalized. Periodically, at the discretion of the Board, the grants payable is adjusted up or down during the year when there are significant differences between budgeted and actual assessments revenue. Grants are paid as the state organizations provide documentation of the expenditure of funds. The outstanding grant liability by program was as follows as of December 31:

| | | 2023 | | 2022 |
|---|----|-----------|----|-----------|
| | Φ. | 011.570 | Φ. | 504.000 |
| Research, development, and demonstrations | \$ | 814,672 | \$ | 781,233 |
| Heating oil efficiency and upgrade | | 355,126 | | 367,009 |
| Consumer education, safety, and training | | 800,752 | | 1,094,089 |
| Total state grants payable | | 1,970,550 | | 2,242,331 |
| Unallocated state rebates | | 2,868,676 | | 2,403,161 |
| Total state grants payable and obligation for | | | _ | |
| unallocated state rebates | \$ | 4,839,226 | \$ | 4,645,492 |

Leases

The Alliance determines if an arrangement is a lease at inception by determining whether the agreement conveys the right to control the use of the identified asset for a period of time, whether the Alliance has the right to obtain substantially all of the economic benefits from use of the identified asset, and the right to direct the use of the asset. Lease liabilities are recognized at the commencement date based upon the present value of the remaining future minimum lease payments over the lease term using a risk-free rate as of the commencement date. The Alliance's lease terms include options to renew or terminate the lease when it is reasonably certain that the Alliance will exercise the option.

The lease right-of-use assets are initially measured at the carrying amount of the lease liability and adjusted for any prepaid or accrued lease payments, remaining balance of lease incentives received, unamortized initial direct costs, or impairment charges relating to the right-of-use-asset. The Alliance's lease contains escalation clauses, which are factored into the right-of-use asset where appropriate. Lease expense for minimum lease payments are recognized on straight-line basis over the lease term. The Alliance's lease agreements do not contain any material residual value guarantees or material restrictive covenants. Short-term leases (those with an initial term of twelve months or less and no purchase option) are expensed over their terms, with no corresponding right-of-use asset or lease liability recorded.

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

Revenue Recognition

Assessments Revenue

The Public Laws 113-79 and 115-334 require wholesale distributors of No. 1 distillate and No. 2 dyed distillate to remit an assessment of two-tenths of one cent per gallon at the point of sale to the Alliance. If the No. 1 distillate or No. 2 dyed distillate is imported after the point of sale, the assessment is to be made when the product enters the United States of America. Assessments are due to be remitted to the Alliance at least quarterly based on actual sales. Assessments revenue is heavily impacted by weather in the states with the highest oilheat usage, the economy, and other factors that impact the sale of distillate.

Assessments Receivable

An estimate of assessments to be received, but not remitted to the Alliance as of year-end, was recognized as assessments receivable of \$2,424,760, \$2,656,113, and \$2,697,953 as of December 31, 2023, 2022, and 2021, respectively. Management reviews historical, current, and future conditions of the individual wholesale distributors to determine expected credit losses. As of December 31, 2023 and 2022, no allowance for credit losses was considered necessary by management.

Refunds Payable

Under the Public Laws 113-79 and 115-334's collections rules, any dyed distillate or blends are subject to assessment. Some of this fuel is used for non-heating applications and can be refunded. Assessments revenue is presented in the accompanying statements of activities net of refunds recorded of \$1,169,277 and \$1,065,987 for the years ended December 31, 2023 and 2022, respectively. The Alliance recorded a refunds payable of \$490,229, \$423,646, and \$415,152 as of December 31, 2023, 2022, and 2021, respectively, for estimated refunds remaining unpaid based on historical and subsequent refunds paid.

Other Income and Deferred Contract Revenue

Other income includes contract revenue which is earned from research and development contracts with third parties and is recognized when services have been completed based on time and materials expended. Contract revenue received in advance of when service is provided is recorded as deferred contract liability and was \$375,490 and \$272,052 as of December 31, 2023 and 2022, respectively. A detail of other income as of December 31, is as follows:

| | 2023 | | | 2022 | |
|-----------------------------|------|----------|----|-----------|--|
| Contract revenue | \$ | 346,562 | \$ | 77,948 | |
| Gross sales of publications | | 82,172 | | 116,864 | |
| Less: cost of sales | | (90,112) | | (114,956) | |
| Interest income | | 219,833 | | 26,616 | |
| Other income | | 3,445 | | 828 | |
| Total other income | \$ | 561,900 | \$ | 107,300 | |

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

Functional Allocation of Expenses

The cost of providing the various programs and other activities have been presented on a functional basis in the accompanying statements of activities. Accordingly, certain costs have been allocated among the programs and supporting services benefited based on estimates of time and effort of staff.

Income Tax Status

The Alliance received a determination letter from the Internal Revenue Service (IRS) that it has been granted an exemption from federal income taxes and it qualifies under Section 501(c)(6) of the Internal Revenue Code. The Alliance believes its operations are consistent with the nature of their exemption granted by the IRS. There is no current liability for income taxes on unrelated business income and no temporary differences resulting in deferred taxes as of December 31, 2023 and 2022.

The Alliance is required to measure, recognize, present, and disclose in its financial statements uncertain income tax positions the Alliance has taken in the tax years that remain subject to examination or expects to take on an income tax return. The Alliance recognizes the tax benefits from uncertain income tax positions only if it is more likely than not the tax position will be sustained on examination by tax authorities. The Alliance recorded no liability for uncertain income tax positions for any open tax years.

Subsequent Events

The Alliance has evaluated subsequent events through , which is the date the financial statements were available to be issued.

NOTE 3 - PROGRAM SERVICES

The Public Laws 113-79 and 115-334 place requirements on how the Alliance can spend the assessments it collects. At the beginning of each year, the Alliance makes an estimate of what total assessments are anticipated to be in the coming year. Grants are made to state organizations and national (central) campaigns are undertaken based on the estimates. Actual assessments revenue differ from the estimates and the requirements of Public Laws 113-79 and 115-334. The difference between the estimates and actual assessments are to be reflected in the grants made in future years. The law establishes strict percentage allocations for program spending and these percentages are tied to the revenue received from assessments. Management has developed procedures to ensure these percentages are reflected in budgets and carried forward as appropriate. Variances between the percentages disclosed in the program descriptions below are descriptive of the current year's operations and management believes they do not indicate noncompliance with the statute.

Research, Development, and Demonstration

The Public Laws 113-79 and 115-334 require the Alliance to ensure not less than 30 percent of the assessments collected for each calendar year after the amounts required to be escrowed and not obligated until October 1, 2028, under Public Law 115-334 are used by qualified state associations or the Alliance to conduct research, development, and demonstration activities relating to oilheat fuel, including the development of energy-efficient heating systems to be placed into the marketplace. This also includes the Alliance, in conjunction with an institution or organization engaged in biofuels research, to develop consumer education materials describing the benefits of using biofuels as or in oilheat fuel based on the technical information developed.

NOTE 3 - PROGRAM SERVICES (continued)

Research, Development, and Demonstration (continued)

In 2023, the Alliance granted or expended \$3,041,576 for the research, development, and demonstration program, including \$1,867,162 in national spending of past year's assessments revenue. In 2021, the Alliance Board voted to reallocate up to \$1.0 million in national spending not yet incurred for research, development, and demonstration to those states that have utilized their budgeted grants for research, development, and demonstration for additional research, development, and demonstration spending. In 2021, the Alliance granted \$307,545 in such national funds to states. The remaining amount of the \$1.0 million not spent in 2021, was reallocated in 2022 in addition to up to another \$1.0 million for grants to states that have used their research, development, and demonstration budgets. In 2022, the Alliance granted another \$370,743 to states. In 2023, the Alliance granted \$613,441 in such national funds to states that is included in the amounts granted or expended above. The Alliance also budgeted \$1,169,917 in additional national spending from 2023 assessments revenue to be spent subsequent to year-end for the research, development, and demonstration program making the total for 2023, 32 percent of net assessments revenue after deducting the amount added to net assets unavailable for obligation until October 1, 2028. Additionally, unallocated state rebates of 2023 assessments revenue will be used for the research, development, and demonstration program.

Heating Oil Efficiency and Upgrade

The Public Laws 113-79 and 115-334 require the Alliance to ensure not less than 15 percent of the assessments collected for each calendar year after the amounts required to be escrowed and not obligated until October 1, 2028, under Public Law 115-334 are used by qualified state associations or the Alliance to carry out programs to assist consumers (i) to make cost-effective upgrades to more fuel efficient heating oil systems or otherwise make cost-effective modifications to an existing heating system to improve the efficiency of the system, (ii) to improve energy efficiency or reduce energy consumption through cost-effective energy efficiency programs for consumers, or (iii) to improve the safe operation of a heating system.

In 2023, the Alliance granted or expended \$820,638 for the heating oil efficiency and upgrade program, including \$17,785 in national spending of past year's assessments revenue. The Alliance also budgeted \$55,289 in additional national spending from 2023 assessments revenue to be spent subsequent to year-end for the heating oil efficiency and upgrade program, making the total for 2023, 16 percent of net assessments revenue after deducting the amount added to net assets unavailable for obligation until October 1, 2028. Additionally, unallocated state rebates of 2023 assessments revenue will be used for the heating oil efficiency and upgrade program.

Consumer Education, Safety, and Training

The Public Laws 113-79 and 115-334 require the Alliance to ensure not more than 30 percent of the assessments collected for each calendar year after the amounts required to be escrowed and not obligated until October 1, 2028, under Public Law 115-334 are used (i) to conduct consumer education activities relating to oilheat fuel, including providing information to consumers on energy conservation strategies, safety, new technologies that reduce consumption or improve safety and comfort, the use of biofuel blends, and federal, state, and local programs designed to assist oilheat fuel consumers, (ii) to conduct worker safety and training activities relating to oilheat fuel, including energy efficiency training, (iii) to carry out other activities recommended by the Secretary of Energy, or (iv) to establish a data collection process to track equipment, service, and related safety issues to develop measures to improve safety.

NOTE 3 - PROGRAM SERVICES (continued)

Consumer Education, Safety, and Training (continued)

In 2023, the Alliance granted or expended \$1,554,774 for the consumer education, safety, and training program, including \$185,027 in national spending of past year's assessments revenue. The Alliance also budgeted \$257,936 in additional national spending from 2023 assessments revenue for the consumer education, safety, and training program, making the total for 2023, 30 percent of net assessments revenue after deducting the amount added to net assets unavailable for obligation until October 1, 2028.

Unallocated State Rebates

In addition to the specific program commitments discussed previously, the Alliance has committed \$922,404 to state organizations, which is 17 percent of net 2023 assessment revenue after deducting the amount added to net assets unavailable for obligation until October 1, 2028, for state rebates that had not yet been allocated to a program specified in Public Law 115-334. The Alliance plans to allocate these state rebates to the research, development, and demonstration and/or heating oil efficiency and upgrade programs. State organizations develop detailed plans for use of the rebates to do work under these programs. These funds will be allocated between programs in accordance with the requirements of Public Laws 113-79 and 115-334 as discussed previously.

NOTE 4 - ADMINISTRATIVE EXPENSE CAP

Public Law 115-334 requires the Alliance to limit expenditures for "Administrative" costs to 7 percent of revenue generated by assessment remittances net of amounts unavailable for obligation until October 1, 2028. The Alliance expended \$262,327 and \$228,568 for Administrative expenses, which was 5 and 4 percent, respectively, of net assessments revenue after deducting the amount added to net assets unavailable for obligation until October 1, 2028, in the years ended December 31, 2023 and 2022, respectively. Thus, management believes the Alliance is in compliance with this provision of Public Laws 113-79 and 115-334.

NOTE 5 - ASSESSMENT AND COLLECTION COSTS

The Alliance has developed an audit system for collections compliance and has the legal authority to conduct audits to ensure member compliance. Collection costs include the costs incurred to process annual assessments, to publicize the collection system, and to ascertain compliance as stipulated by Public Laws 113-79 and 115-334. Assessment and collection costs were \$246,501 and \$178,435 for the years ended December 31, 2023 and 2022, respectively.

NOTE 6 - CONCENTRATIONS OF CREDIT RISK

The Alliance maintains cash and investments in federally insured banks and broker-managed accounts and has exposure to credit risk on those accounts. Cash held with commercial banks is insured up to Federal Deposit Insurance Corporation (FDIC) limits. As of December 31, 2023, the Alliance had \$16,801,179 cash in excess of FDIC limits. Management does not consider this a significant concentration of credit risk.

As of December 31, 2023, 34 percent of the Alliance's accounts receivable came from four companies and 41 percent of total revenue and gains/losses were from five companies.

NOTE 7 – NET ASSETS

Pre-2014 Reauthorization Designated Net Assets

As discussed previously, Public Law 113-79 became effective April 1, 2014. The Alliance designated the remaining net assets under the former Public Law 106-469 for use in a national oilheat education program. As of December 31, 2023 and 2022, \$55,933 remained unspent and are designated for future use.

National Spending Not Yet Incurred Designated Net Assets

The Alliance budgets national spending in the accomplishment of its mission under Public Laws 113-79 and 115-334. The Alliance recorded \$3,778,697 and \$4,632,409 in national spending of assessments revenue, which had not yet been incurred as of December 31, 2023 and 2022, respectively. The Alliance has designated net assets in these amounts for future program spending, some of which, the Alliance has approved contracts to expend.

Net Assets Available for Obligation - Other Than For Consumer Education, Safety, and Training

The amount reported as net assets without donor restrictions available for obligation - other than for consumer education, safety, and training are the net amounts available for future obligation for all purposes other than consumer education, safety, and training, since Public Laws 113-79 and 115-334 have placed limits on the use of assessments revenue from consumer education, safety, and training.

Net Assets Unavailable for Obligation Until October 1, 2028

Public Law 115-334 established a requirement that funds be maintained in escrow and be unavailable for use until October 1, 2028. Net assets unavailable for obligation until October 1, 2028, is an accumulation of these net assets plus interest. The Alliance makes contributions annually to the escrow for the prior year's assessments after the conclusion of the audit.

The following is a detail of amounts unavailable for use until October 1, 2028, as of December 31:

| | Assessments | | I | nterest | Total |
|---|-------------|-----------|----|---------|-----------------|
| Unavailable balance, January 1, 2022 | \$ | 5,943,935 | \$ | 3,118 | \$ 5,947,053 |
| Income on escrow | | - | | 380 | 380 |
| Assessments | | 2,094,718 | 1 | - | 2,094,718 |
| Unavailable balance, December 31, 2022 | | 8,038,653 | | 3,498 | 8,042,151 |
| Income on escrow | | - | | 116,021 | 116,021 |
| Assessments | | 1,804,258 | | - | 1,804,258 |
| Unavailable balance, December 31, 2023 | \$ | 9,842,911 | \$ | 119,519 | 9,962,430 |
| Cash held in escrow account, December 31, 2023 | | | | | 8,114,766 |
| Amount to be deposited in escrow after year-end | | | | | |
| your one | | | | | \$ 1,847,664 |

NOTE 8 - FINANCIAL ASSETS AND LIQUIDITY

The Alliance has a budgetary process to develop estimates and make grant payables to comply with Public Laws 113-79 and 115-334. Liquid assets are maintained in cash accounts to minimize risk of loss. Financial assets available within one year for operations that are not subject to restrictions that make them unavailable for general operations as of December 31, were as follows:

| | 2023 | 2022 |
|---|-----------------|--------------|
| Cash, except cash held in escrow | \$ 9,212,417 | \$ 9,920,538 |
| Assessments receivable due within one year | 2,424,760 | 2,656,113 |
| Prepaid state assessments | 1,018 | 27,293 |
| Other assets | 11,903 | 16,683 |
| Less: state grants payable | (1,970,550) | (2,242,331) |
| Less: obligation for unallocated state rebates | (2,868,676) | (2,403,161) |
| Less: amounts to be transferred to escrow | (1,847,664) | (2,097,717) |
| Less: designated net assets for national spending | | |
| not yet incurred | (3,778,697) | (4,632,409) |
| Total financial assets available within one year | | |
| for operations | \$ 1,184,511 | \$ 1,245,009 |
| Tor operations | 1,101,511 | Ψ 1,2 15,000 |

NOTE 9 – LEASE COMMITMENTS

The Alliance has an operating lease agreement for a liquid fuels research center. The Alliance extended the lease through December 31, 2025. The lease contains an option for a second renewal term through December 31, 2030, that has not been exercised, however, management determined in 2023 that it is reasonably certain to be exercised. The remaining weighted-average lease term is 84 months. The Alliance has recorded an operating right-of-use asset of \$664,986 and \$274,512 and an operating lease liability of \$687,625 and \$281,314 as of December 31, 2023 and 2022, respectively, based on a weighted-average discount rate of 1.63 percent and 1.37 percent, respectively. The Alliance also has two short-term leases for the storage of liquid fuels and equipment. Total rent expense under the leases was \$133,322 and \$69,430 for the years ended December 31, 2023 and 2022, respectively, and is included in occupancy on the accompanying statements of functional expenses. Future minimum lease payments including those for the lease renewal that is reasonably certain to be exercised are as follows for the years ending December 31:

| 2024 | | \$ 95,200 |
|--------------------------|---------|---------------|
| 2025 | | 98,056 |
| 2026 | | 100,998 |
| 2027 | | 104,028 |
| 2028 | | 107,149 |
| Thereafter | | 224,037 |
| Undiscounted future cas | h flows | 729,468 |
| Less: discount to presen | t value | (41,843) |
| Total operating lease li | ability | \$ 687,625 |

NOTE 10 – ADOPTION OF NEW ACCOUNTING STANDARD

During the year ended December 31, 2023, the Alliance was required to implement Accounting Standards Update (ASU) No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. The standard changed how entities measure credit losses for most financial assets. The guidance implemented a shift from the incurred loss model to the expected loss model. The Alliance adopted the standard effective January 1, 2023. The adoption did not significantly impact the Alliance's allowance for credit losses balance.

NATIONAL OILHEAT RESEARCH ALLIANCE, INC. SUPPLEMENTAL SCHEDULE OF EXPENSES BY STATE/JURISDICTION - RESEARCH, DEVELOPMENT, AND DEMONSTRATION FOR THE YEAR ENDED DECEMBER 31, 2023

| | | Additional | |
|--|------------|---------------|--------------|
| | Initial | Amounts | |
| | Amounts | Expended From | |
| | Granted in | National | |
| | 2023 | Budget | Total |
| | | Buger | |
| STATE GRANTS: | | | |
| Connecticut | \$ 58,975 | \$ - | \$ 58,975 |
| Indiana | 464 | - | 464 |
| Kentucky | 6,708 | - | 6,708 |
| Maine | 30,700 | 43,244 | 73,944 |
| MAPDA (Delaware, Maryland, and Washington, D.C.) | 17,801 | 30,489 | 48,290 |
| Massachusetts | 55,879 | 73,671 | 129,550 |
| Michigan | 7,069 | 5,443 | 12,512 |
| Nevada | 160 | - | 160 |
| New Hampshire | 20,587 | 72,063 | 92,650 |
| New Jersey | 25,437 | 37,318 | 62,755 |
| New York: | | | |
| UNYEA | 27,449 | 35,890 | 63,339 |
| HVOEC | 16,470 | - | 16,470 |
| NYSEC | 65,879 | 213,988 | 279,867 |
| North Carolina | 60,079 | - | 60,079 |
| Ohio | 15,685 | - | 15,685 |
| Pennsylvania | 77,641 | 97,726 | 175,367 |
| Rhode Island | 18,420 | - | 18,420 |
| South Carolina | 7,843 | - | 7,843 |
| Vermont | 13,364 | 2 (00 | 13,364 |
| Virginia | 21,206 | 3,609 | 24,815 |
| Washington | 2,115 | - | 2,115 |
| Wisconsin | 11,042 | | 11,042 |
| Total state and ware | ¢ 560.072 | ¢ (12.441 | 1 174 414 |
| Total state grant expense | \$ 560,973 | \$ 613,441 | 1,174,414 |
| NATIONAL SPENDING IN 2023 | | | 1,867,162 |
| TOTAL 2023 EXPENSE | | | \$ 2.041.576 |
| TOTAL 2023 EAPENSE | | | \$ 3,041,576 |
| | | | |
| 2023 NATIONAL BUDGET NOT YET SPENT | | | \$ 1,169,917 |
| | | | |

In addition to these amounts, the unallocated state rebates detailed in the accompanying supplemental schedule of expenses by state/jurisdiction - unallocated state rebates will be used for either this program or for the heating oil efficiency and upgrade program.

NATIONAL OILHEAT RESEARCH ALLIANCE, INC. SUPPLEMENTAL SCHEDULE OF EXPENSES BY STATE/JURISDICTION - HEATING OIL EFFICIENCY AND UPGRADE FOR THE YEAR ENDED DECEMBER 31, 2023

| Amour Grante 2023 | d in | |
|--|--------|---------------|
| STATE GRANTS: | | |
| Connecticut \$ 9 | 90,029 | |
| Indiana | 709 | |
| Kentucky 1 | 10,239 | |
| Maine 4 | 16,865 | |
| MAPDA (Delaware, Maryland, and Washington, D.C.) | 27,174 | |
| Massachusetts 8 | 35,303 | |
| Michigan 1 | 10,791 | |
| Nevada | 236 | |
| New Hampshire | 31,427 | |
| New Jersey | 38,831 | |
| New York: | | |
| UNYEA 4 | 11,903 | |
| | 25,142 | |
| |)5,767 | |
| North Carolina | 36,071 | |
| Ohio 2 | 23,945 | |
| Pennsylvania 11 | 15,472 | |
| | 28,119 | |
| South Carolina | 11,972 | |
| Vermont 2 | 20,400 | |
| Virginia 3 | 32,373 | |
| | 3,229 | |
| Wisconsin 1 | 16,856 | |
| Total state grant expense | | \$ 802,853 |
| NATIONAL SPENDING IN 2023 | | 17,785 |
| TOTAL 2023 EXPENSE | | \$ 820,638 |
| 2023 NATIONAL BUDGET NOT YET SPENT | | \$ 55,289 |

In addition to these amounts, the unallocated state rebates detailed in the accompanying supplemental schedule of expenses by state/jurisdiction - unallocated state rebates will be used for either this program or for the research, development, and demonstration program.

NATIONAL OILHEAT RESEARCH ALLIANCE, INC. SUPPLEMENTAL SCHEDULE OF EXPENSES BY STATE/JURISDICTION - CONSUMER EDUCATION, SAFETY, AND TRAINING FOR THE YEAR ENDED DECEMBER 31, 2023

| | Amounts Granted in 2023 | | |
|--|-------------------------|--------|-----------|
| STATE GRANTS | | | |
| Connecticut | \$ 163,215 | | |
| Indiana | 1,285 | | |
| Kentucky | 18,563 | | |
| Maine | 84,963 | \neg | |
| MAPDA (Delaware, Maryland, and Washington, D.C.) | 49,264 | | |
| Massachusetts | 154,647 | | |
| Michigan | 19,563 | | |
| Nevada | 428 | | |
| New Hampshire | 56,975 | | |
| New Jersey | 70,398 | | |
| New York: | | | |
| UNYEA | 75,967 | | |
| HVOEC | 45,580 | | |
| NYSEC | 177,121 | | |
| North Carolina | (5,735) | | |
| Ohio | 43,410 | | |
| Pennsylvania | 209,337 | | |
| Rhode Island | 50,978 | | |
| South Carolina | 21,705 | | |
| Vermont | 36,984 | | |
| Virginia | 58,686 | | |
| Washington | 5,855 | | |
| Wisconsin | 30,558 | | |
| Total state grant expense | | \$ | 1,369,747 |
| NATIONAL SPENDING IN 2023 | | | 185,027 |
| TOTAL 2023 EXPENSE | | \$ | 1,554,774 |
| 2023 NATIONAL BUDGET NOT YET SPENT | | \$ | 257,936 |

NATIONAL OILHEAT RESEARCH ALLIANCE, INC. SUPPLEMENTAL SCHEDULE OF EXPENSES BY STATE/JURISDICTION - UNALLOCATED STATE REBATES FOR THE YEAR ENDED DECEMBER 31, 2023

| | Amounts Granted in 2023 |
|--|-------------------------|
| UNALLOCATED STATE REBATES: | |
| Connecticut | \$ 105,431 |
| Indiana | 830 |
| Kentucky | 11,991 |
| Maine | 54,883 |
| MAPDA (Delaware, Maryland, and Washington, D.C.) | 31,823 |
| Massachusetts | 99,897 |
| Michigan | 12,637 |
| Nevada | 277 |
| New Hampshire | 36,804 |
| New Jersey | 45,475 |
| New York: | |
| UNYEA | 49,072 |
| HVOEC | 29,443 |
| NYSEC | 117,772 |
| North Carolina | 30,532 |
| Ohio | 28,041 |
| Pennsylvania | 135,223 |
| Rhode Island | 32,930 |
| South Carolina | 14,021 |
| Vermont | 23,890 |
| Virginia | 37,911 |
| Washington | 3,782 |
| Wisconsin | 19,739_ |
| | |
| TOTAL 2023 EXPENSE | \$ 922,404 |

These unallocated state rebates will be allocated to either the research, development, and demonstration or the heating oil efficiency and upgrade programs based on detailed plans for use of the rebates to be submitted by the states.



Board of Directors National Oilheat Research Alliance 304 Main Avenue #405 Norwalk, CT 06851

In planning and performing our audit of the financial statements of National Oilheat Research Alliance (the Alliance) as of and for the year ended December 31, 2023, in accordance with auditing standards generally accepted in the United States of America, we considered the Alliance's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Alliance's internal control. Accordingly, we do not express an opinion on the effectiveness of the Alliance's internal control.

Our consideration of internal control was for the limited purpose described in the preceding paragraph and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and, therefore, material weaknesses or significant deficiencies may exist that were not identified. However, as discussed below, we identified certain deficiencies in internal control that we consider to be significant deficiencies.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies in internal control, such that there is a reasonable possibility that a material misstatement of the organization's financial statements will not be prevented, or detected and corrected, on a timely basis. We did not identify any deficiencies in internal control that we consider to be material weaknesses:

A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance. We consider the following deficiencies in the Alliance's internal control to be significant deficiencies:

Collection and Analysis of Receivables and Allowance for Credit Losses

When the Alliance receives assessments revenue from wholesalers, frequently the payments get made separate from the remittance of the Form 782 that communicate how to account for the remittance. This requires a matching process between the payments received and the forms submitted. Therefore, there is a receivable recorded for situations where the Form 782 has been remitted, but the funds have not yet been received. During our audit, we noted there was not a process in place to communicate those receivables accurately to management so that follow up could be done to collect the outstanding balances. This resulted in an analysis performed by management during the audit to collect outstanding balances. Potentially, this could also lead to misstatement if balances are recorded in duplicate or are not deposited by the Alliance.

Furthermore, in 2023, the Alliance implemented a new accounting standard Accounting Standards Update No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. The new standard requires management to evaluate the past, current, and future conditions and evaluate for each receivable the credit worthiness of the wholesaler in establishing an allowance for credit losses. During our audit, we noted the Alliance does not have a process for documenting their analysis of each receivable for credit loss under this standard.

We recommend the Alliance develops a process to analyze outstanding balances to make collections. Furthermore, we recommend the Alliance develop and document an analysis annually of outstanding balances for consideration of the allowance for credit losses.

Management's Response – Management agrees with this comment and is developing processes to address it.

Classification of Designated Net Assets

The Alliance tracks amounts of national budgeted spending that has not yet been expended by program as designated net assets. This enables management to identify how much remaining spending is available for obligation going forward. The Alliance further tracks the amount designated to be maintained in escrow amounts as specified in the NORA Statutes to be unavailable for obligation until October 1, 2028. During our audit, we noted designated net assets were not properly classified as follows:

- The Alliance is required to place 25 percent of net assessments revenue plus any interest earned on the funds that are unavailable for obligation until October 1, 2028, in an escrow account. By policy, the Alliance makes transfers to the escrow account annually after the audit is complete. Under this policy, in 2023, a transfer of amounts due to the escrow was made in December 2023 for amounts from 2022. In 2023, The Alliance began earning significantly more interest on its cash accounts, including those that are not escrowed. Therefore, the funds that were not yet transferred to the escrow, but would be in the future, earned interest in the Alliance's operations account. The Alliance did not account for the interest earned in the operations account in its calculation of the amount to be transferred to the escrow at the close of the 2023 audit and thus understated the designed net assets for amounts unavailable for obligation until October 1, 2028.
- The Alliance did not calculate correctly and record the amount of national budgeted spending that has not yet been expended as of December 31, 2023.

This resulted in a reclassification of net assets proposed by us and made by management during the audit. We recommend more communication of contractual obligations be made internally so that the designated net assets can be properly calculated.

Management's Response – Management agrees with this comment and is developing processes to address it.

Classification of Expenses

Throughout the year, the Alliance records many expenditures of national (central) activities in central accounts (such as accounts for central RD&D, central administration, central annual report, etc). This has historically been done to match the budgeting of these expenditures. Accounting principles generally accepted in the United States of America (GAAP) requires expenses to be broken out in more detail in the statement of functional expenses. Therefore, annually, the Alliance's accountants make journal entries to reclassify these expenses for GAAP purposes. These journal entries are time consuming. Furthermore, in 2023, the journal entries were not complete and thus additional reclassifications were proposed by us and made by management. Beginning with the 2024 budget, the Alliance changed the budgeting process to budget based on GAAP classifications. We recommend that going forward, the Alliance discontinue the use of the central accounts and instead code the transactions to the proper place under GAAP to avoid errors at year-end.

Management's Response – Management agrees with this comment and is developing processes to address it.

The Alliance's written responses to the significant deficiencies identified in our audit have not been subjected to the audit procedures applied in the audit of the financial statements and, accordingly, we express no opinion on them.

This communication is intended solely for the information and use of the Board of Directors, management, and others within the Alliance, and is not intended to be, and should not be, used by anyone other than these specified parties.

Very truly yours,

UHY LLP McLean, Virginia



Board of Directors National Oilheat Research Alliance 304 Main Avenue #405

Norwalk, CT 06851

We have audited the financial statements of the National Oilheat Research Alliance (the Alliance) for the year ended December 31, 2023, and have issued our report thereon dated ______. Professional standards require that we provide you with information about our responsibilities under auditing standards generally accepted in the United States of America, as well as certain information related to the planned scope and timing of our audit. We have communicated such information in our letter to you dated July 17, 2024. Professional standards also require that we communicate to you the following information related to our audit.

The following specific matters must be communicated:

- A. Qualitative Aspects of Accounting Practices
- B. Difficulties Encountered in Performing the Audit
- C. Corrected and Uncorrected Misstatements
- D. Disagreements with Management
- E. Management Representations
- F. Management Consultations with Other Independent Accountants
- G. Other Audit Findings or Issues
- H. Other Matters

Our comments on the above matters are presented in the attachment (Exhibit A) to this letter. The information contained therein is intended solely for the use of the Board of Directors and management of the Alliance and is not intended to be, and should not be, used by anyone other than these specified parties. We would welcome the opportunity to discuss the matters contained in this communication with you since they are best communicated in person.

Very truly yours,

McLean, Virginia

Attachment

National Oilheat Research Alliance

SIGNIFICANT AUDIT FINDINGS

A. Qualitative Aspects of Accounting Practices

Management is responsible for the selection and use of appropriate accounting policies. The significant accounting policies used by the Alliance are described in Note 2 to the financial statements. As described in Note 10 to the financial statements, the Alliance implemented Accounting Standards Update (ASU) No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. The standard changed how entities measure credit losses for most financial assets. The guidance implemented a shift from the incurred loss model to the expected loss model. Otherwise, no other new accounting policies were adopted and the application of existing policies was not changed during 2023. We noted no transactions entered into by the Alliance during the year for which there is a lack of authoritative guidance or consensus. All significant transactions have been recognized in the financial statements in the proper period.

Accounting estimates are an integral part of financial statements prepared by management and are based on management's knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ significantly from those expected. The most sensitive estimates affecting the financial statements were:

- Amount of assessments receivable and allowance for credit losses based on past, current, and future conditions.
- Estimate of reserve for future payments of refunds based on past experience.
- Recognition of additional lease liability and right-of-use asset based on management's assertion that the Alliance was reasonably certain to extend the lease as of December 31, 2023.

We evaluated the key factors and assumptions used to develop the estimates in determining that they are reasonable in relation to the financial statements taken as a whole.

The financial statement disclosures are neutral, consistent, and clear.

B. Difficulties Encountered in Performing the Audit

The completion of our audit was significantly delayed due to delays in closing of the books by the Alliance and due to analysis needed in response to classification errors noted for receipts and disbursements.

C. Disagreements with Management

For purposes of this letter, a disagreement with management is a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

D. Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all misstatements identified during the audit, other than those that are clearly trivial, and communicate them to the appropriate level of management. Management has corrected all such misstatements. The following material misstatement detected as a result of audit procedures were corrected by management:

• To record right-of-use asset and operating lease liability – approximately \$496,000

E. Management Representations

| We | have | requested | certain | representations | from | management | that are | included | in | the | managemen |
|------|---------|---------------|---------|-----------------|------|------------|----------|----------|----|-----|-----------|
| repr | esentat | ion letter da | ated | · | | | | | Ì | 7 | |

F. Management Consultations with Other Independent Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. If a consultation involves application of an accounting principle to the Alliance's financial statements or a determination of the type of auditor's opinion that may be expressed on those statements, our professional standards require the consulting accountant to check with us to determine that the consultant has all the relevant facts. To our knowledge, there were no such consultations with other independent accountants.

G. Other Audit Findings or Issues

We generally discuss a variety of matters, including the application of accounting principles and auditing standards, with management each year prior to retention as the Alliance's auditors. However, these discussions occurred in the normal course of our professional relationship and our responses were not a condition to our retention.

Statement on Auditing Standards (SAS) No. 134, Auditor Reporting and Amendments, Including Amendments Addressing Disclosures in the Audit of Financial Statements, clarified the requirements for auditors communications with those charged with governance to require the auditor to communicate about significant risks identified that could impact the financial statements. We identified the following significant risks that were considered in our audit process:

- Potential risk of management override of controls.
- Risk that while the lease renewal is reasonably certain, the renewal was not properly accounted for.
- Potential risk of the susceptibility of revenue to fraud.

H. Other Matters

With respect to the supplementary information accompanying the financial statements, we made certain inquiries of management and evaluated the form, content, and method of preparing the information to determine that the information complies with accounting principles generally accepted in the United States of America, the method of preparing it has not changed from the prior period, and the information is appropriate and complete in relation to our audit of the financial statements. We compared and reconciled the supplementary information to the underlying accounting records used to prepare the financial statements or to the financial statements themselves.



Internal Financial Statements
For the Eight Months Ended August 31, 2024

National Oilheat Research Alliance, Inc. Internal Financial Statements August 31, 2024

| <u>I</u> | Pages |
|-----------------------------------|-------|
| Table of Contents. | 1 |
| Financial Summary | 2 |
| Statements of Financial Position. | . 3 |
| Statements of Activities | 4 |

National Oilheat Research Alliance, Inc. Financial Summary For the Eight Months Ended August 31, 2024

NORA operated at a deficit of \$379K for the first eight months of the year. This is the result of recording the state program expenses (Consumer Ed & Training, Research & Development and Home Efficiency) and state rebates in their entirety up front. Whereas the revenue/collections are recorded throughout the year. We expect this to smooth out as we continue to receive collections.

During April 2024, NORA reduced the 2024 budget by 10% due to the decrease in collections during the first quarter of 2024.

Collections were approximately \$4.6M for the first eight months of the year. This represents 65% of budgeted annual collections.

The annual escrow is calculated at year end and will continue to be reflected as a variance throughout the year.

Central program expenses of \$1.1M are behind budget by \$354K through August 31st as the expenses were not incurred.

States and Rebates program expenses of \$3 million and \$508K, respectively, are over/under budget by \$236K and \$43K, respectively, due to the \$2 million additional Research & Development funds allocated in 2021 and 2022, respectively.

The Unallocated or non-programmatic expenses are approximately \$177K as compared to an annual budget of \$356K. We expect the expenses to be incurred in the remainder of the year which will result in reducing the variance.

As of August 31, 2024, the NORA Statement of Financial Position continues to be very strong with \$10.3 million in available cash and \$8.4 million in escrow. This is offset by \$4.8 million in grants payable to the participating states and \$934K in other liabilities. Accounts payable is current as are the other accrued expenses. Net assets are in excess of \$13 million.

Assessments Receivable of \$333K represents amounts due from customers. The uncollected balance as of September 18th is \$224K, which is expected to be collected.

During July 2023, NORA entered into a \$450,000 contract with Clean Fuels Alliance America ("CFAA") for Research Development. NORA received the first installment of \$236,500 during August 2023 and the second installment of \$213,500 during October 2023. During April 2024 NORA entered into an additional \$550,000 contract with CFAA for Research Development. NORA received the first installment of \$243,500 during June 2024. As of August 31, 2024, NORA has incurred \$440,218 in expenses; \$74,510 in 2023 and \$365,708 in 2024. The remaining balance of \$253,823 is classified as deferred contract revenue on the Statement of Financial Position.

National Oilheat Research Alliance, Inc. Statement of Financial Position August 31, 2024

ASSETS

| CURRENT ASSETS: | | |
|---|----|------------|
| Cash | \$ | 10,313,067 |
| Cash Held in Escrow | | 8,364,962 |
| Assessments Receivable | | 333,175 |
| Security Deposit | | 24,514 |
| Other Receivables | | 19,154 |
| Prepaid Assets | | 15,025 |
| Operating right-of-use asset | | 123,088 |
| Total Curent Assets | | 19,192,985 |
| PROPERTY AND EQUIPMENT: | | |
| Office Furniture and Equipment | | 80,076 |
| Website | | 45,450 |
| Computer Equipment | | 3,819 |
| Less: Accumulated Depreciation | | (83,275) |
| Less: Accumulative Amortization (Web Site) | | (45,450) |
| Total Property and Equipment | | 620 |
| | | |
| TOTAL ASSETS | \$ | 19,193,605 |
| LIABILITIES AND NET ASSETS | | |
| LIADH ITIEG | | |
| LIABILITIES: | | |
| Grants Payable: State Rebate Obligations - Education | \$ | 946,214 |
| State Rebate Obligations - Education State Rebate Obligations - R&D | Φ | 979,636 |
| State Rebate Obligations - Energy Efficiency | | 488,454 |
| State Rebate Obligations - Rebates | | 2,355,281 |
| Total Grants Payable | | 4,769,586 |
| Total Granto Layuoto | | .,,,,,,,,, |
| Other Liabilities: | | |
| Accounts Payable | | 254,772 |
| Accrued Expenses | | 29,335 |
| Accrued Salaries & Benefits | | 57,064 |
| Deferred Contract Revenue | | 253,283 |
| Refunds Payable | | 210,000 |
| Operating lease liability | | 129,507 |
| Total Other Liabilities | | 933,961 |
| T 4 17 1 177 | | 5.702.546 |
| Total Liabilities | | 5,703,546 |
| NET ASSETS: | | |
| Unrestricted Net Assets | | (50,215) |
| Pre-2014 Reauthorization Net Assets | | 55,933 |
| Unavailable for Obligation until 10/01/2028 | | 8,042,151 |
| National Spending Not Yet Incurred: | | 4 000 00 - |
| Research, development, and demonstration - not yet obligated | | 4,988,836 |
| Research, development, and demonstration - obligated under contract | | 67,594 |
| Heating oil efficiency and upgrade - not yet obligated | | 192,521 |
| Consumer education, safety, and training - not yet obligated | | 193,238 |
| Total Net Assets | | 13,490,059 |
| TOTAL LIABILITIES AND NET ASSETS | \$ | 19,193,605 |

National Oilheat Research Alliance, Inc. Statement of Activities Budget vs. Actual

For the Eight Months Ended August 31, 2024

| | Y | TD Actual 8/31/24 | Percentage | Annual Budget 2024 | | | Variance | |
|--|----|-------------------|------------|--------------------|-------------|----|---------------------|--|
| REVENUE: | | | | | | | | |
| Collections and Assessments: | | | | | | | | |
| Collections | \$ | 4,622,870 | 65.10% | \$ | 7,100,773 | \$ | (2,477,903) | |
| Refunds | | (506,979) | | | - | | (506,979) | |
| Escrow | | _ | | | (1,775,193) | | 1,775,193 | |
| Net Collections | | 4,115,890 | | | 5,325,580 | | (1,209,690) | |
| EXPENSES: | | | | | | | | |
| Program Expenses: | | | | | | | | |
| Consumer Education and Training (Max. 30%) | | 1,323,026 | | | 1,544,418 | | (221,392) | |
| Education and Training (Central) | | 124,410 | | | 252,000 | | (127,590) | |
| Education and Training (States) | | 1,198,616 | | | 1,292,418 | | (93,802) | |
| Research Development and Demonstration (Min. 30%) | | 1,896,813 | | | 1,845,158 | | 51,655 | |
| Research Development and Demonstration (Central) | | 940,989 | | | 1,143,000 | | (202,011) | |
| Research Development and Demonstration (States) | | 955,825 | | | 702,158 | | 253,667 | |
| Home Energy Efficiency Program (Min. 15%) | | 895,439 | | | 843,867 | | 51,572 | |
| Home Energy Efficiency Program (Central) | | 33,860 | | | 58,500 | | (24,640) | |
| Home Energy Efficiency Program (Central) | | 861,579 | | | 785,367 | | 76,212 | |
| Total Central | | 1,099,259 | 75.63% | | 1,453,500 | | (354,241) | |
| | | | | | | | | |
| Total States | | 3,016,020 | 108.49% | | 2,779,943 | - | 236,077 | |
| State Rebates | | 508,395 | 92.24% | | 551,137 | | (42,742) | |
| Office Unallocated Expenses: | | | | | | | | |
| Salaries and Consulting | | 68,983 | | | 165,000 | | (96,017) | |
| Accounting | | 16,677 | | | 35,000 | | (18,323) | |
| Insurance | | 13,962 | | | 15,000 | | (1,038) | |
| Taxes | | 2,819 | | | 3,000 | | (181) | |
| Postage | | 863 | | | 1,500 | | (637) | |
| Web Pages | | 4,800 | | | 15,000 | | (10,200) | |
| Rent and Telephone | | 3,098 | | | 7,500 | | (4,402) | |
| Travel | | - | | | 7,500 | | (7,500) | |
| Meeting Expenses | | - | | | 5,000 | | (5,000) | |
| Office Supplies | | - | | | 2,500 | | (2,500) | |
| Dues & Memberships | | 6,712 | | | 5,000 | | 1,712 | |
| Bank Fees | | 486 | | | 3,000 | | (2,514) | |
| Legal Expense | | 56,000 | | | 84,000 | | (28,000) | |
| Payroll Processing Fees | | 2,346 | | | 4,000 | | (1,654) | |
| Equipment Maintenance | | 165 | | | 3,000 | | (2,835) | |
| Total Office Unallocated Expenses | | 176,912 | 49.69% | | 356,000 | | (179,088) | |
| General and Special Projects: | | | | | | | | |
| Assessment and Collection Costs | | 170,109 | | | 230,000 | | (59,891) | |
| Annual Report | | 29,562 | | | 55,000 | | (25,438) | |
| Total General and Special Projects | | 199,672 | | | 285,000 | | (85,328) | |
| Other Expenses/(Income): | | | | | | | | |
| Interest Income | | (491,023) | | | (100,000) | | 391,023 | |
| Contract Revenue (CFAA) | | (365,708) | | | (225,000) | | 140,708 | |
| Other Income-Technicians Manual | | (59,473) | | | - | | 59,473 | |
| Other Income | | (1,040) | | | - | | 1,040 | |
| Contract Expenses (CFAA) | | 365,708 | | | 225,000 | | (140,708) | |
| Cost of Goods Sold-Technicians Manual Total Other Expenses/(Income) | | (504,698) | | | (100,000) | | (46,839) 404,698 | |
| Net Deficit | • | | | \$ | (100,000) | \$ | | |
| Not Delicit | \$ | (379,669) | | Þ | | Ф | (379,669) | |

These Financial Statements omit substantially all disclosures and the statement of cash flows ordinarily included in the financial 4 statements prepared in accordance with the accrual basis of accounting and have not been subjected to an audit, review, or compilation engagement, and no assurance is provided on them.

NORA Research Update

Board of Directors Meeting
Southern New England Energy Conference
Newport, RI
Sept. 2024

Tom Butcher, Technical Director National Oilheat Research Alliance



Topics

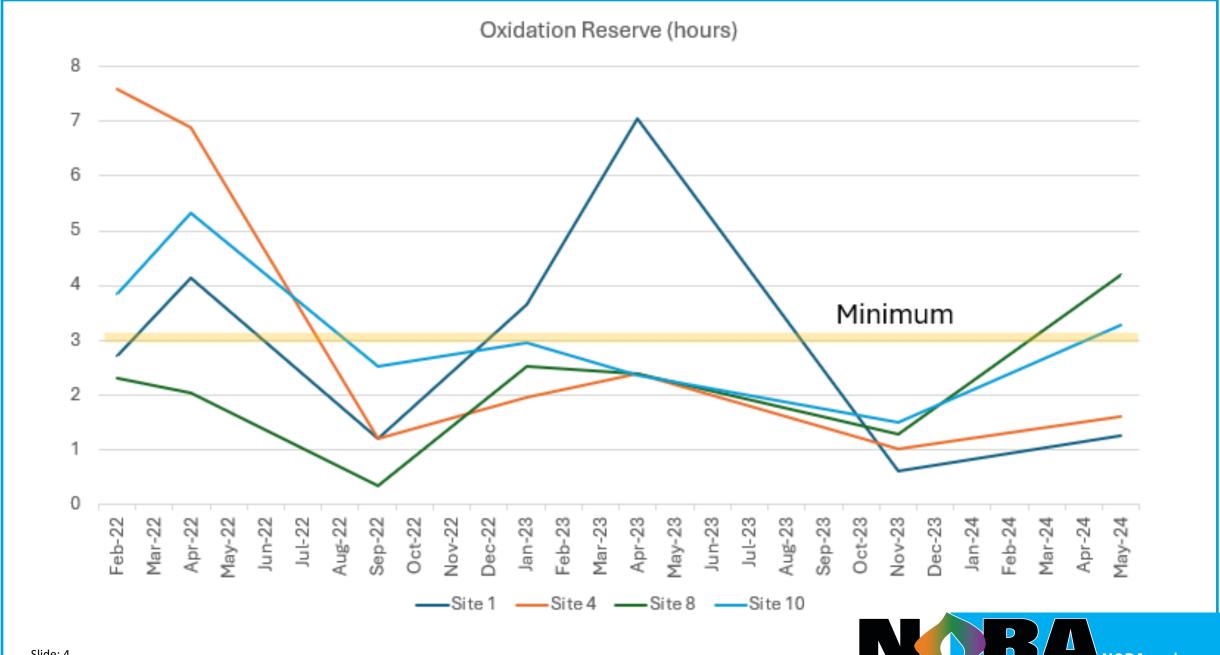
- High Biodiesel Blend Field Testing
- In-Lab Head Coking Studies with Biofuels
- EL
- Heated Outside Fuel Storage Tanks
- RD Field Study Plans
- Meetings and Publications
- Research Internships



High Blend (B100) Field Testing - Key Findings

No system pump / seal / leak problems;
No basic combustion problems;
Fuel Quality remains good over entire year;
Some reduction in fuel quality over summer;
Heating season deliveries enhance fuel quality;
Fuel filterable particulates in many cases quite high;
Head coking with high biodiesel blends in some cases remains a concern.





NATIONAL OILHEAT RESEARCH ALLIANCE

Head Coking in the Field

- Typically more than annual cleaning not required;
- More coking in cold wall boilers;
- We have limited furnace data;
- More cycling leads to more coking;
- Increasing pressure, using prepurge and (?) post purge is helpful;
- Nozzle internal valves not found to be very helpful;
- Blends with more volatile fuels better;
- Burner manufacturers making progress on improved burners for high blends.







Plans – High Blend Field Tests

- "End-of-Summer" fuel sampling and analysis is now in progress
- Hart Home Comfort Sites will continue with B100 tests
- Adding new burners at some sites in collaboration with burner manufacturers



Head Coking Factors

Hardware

Control settings

Cycling rates

Burner design

Combustion chamber "temperature"

Fuel heating

Fuel Trace components

Blends which increase lower temperature volatility.

Service Practices

Burner head cleaning protocols.



In-Lab Head Coking Tests

- 4-day testing performed at the NORA lab
- 3000 cycles, 60s on and 60s off
- Managed by lab control system
- Condition of head monitored before and after testing







Test 39 – B100 Without Refractory



Test 77 – B100 With Refractory



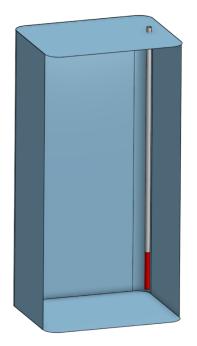


Key findings to-date in-lab head coking

- Cold chamber boilers most challenging
- Distillation curves seen as important factor
- Adding refractory and minimizing post purge can strongly increase measured head temperature and reduce head coking
- Burner manufacturers are making good progress in burner changes for high blends
- Blending lighter components (RD, Kero) dramatically reduces head coking
- European blue flame, low NOx burner did not show coking
- Higher pump pressure and other adjustments help



CEMA Tank Test 2023-2024



- Changed setup for remote monitoring
- Testing to continue with twotanks in 24/25 heating season



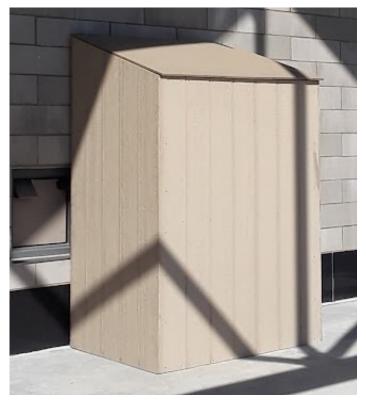


Heated Tank Enclosure – SUNY Morrisville



- Testing started near the end of last season
- Results very encouraging
- System to be changed over to remote monitoring
- Changes in heater thermostat settings







Ethyl Levulinate (EL)

Current testing to support ASTM standard

- Storage stability
- Steel corrosion





Increased Acids in EL Sample - Angelica Lactone

- Testing of EL batch produced to match pilot plant production showed higher than expected TAN
- TAN also increased rapidly in long term storage testing
- Issue attributed to a minor component of the fuel, angelica lactone (about 2%)
- Angelica lactone reacted with water to form levulinic acid
- New distillation step added to production to eliminate impurity
- New GC at NORA will support the QC with these samples



Draft ASTM Standard

- Established EL100 ASTM
 Working Group
 - NORA, NREL, Beckett, Biofine, Sprague
- ASTM Group D-02
- Process Started June '23
- Planning some additional specs for QC: carbon residue, API.

DRAFT – EL100 Specifications

| Property | Test Method | Required Value |
|-----------------------------------|-------------|----------------|
| Density kg/m³ | D4052 | 1000 to 1020 |
| Flash Point °C | D93A | >80 |
| Kinematic Viscosity at 40 °C | D445 | |
| min | D443 | 1.4 |
| max | | 4.0 |
| Water, percent by mass | D1364 | <1.0 |
| Acid Number mg KOH/g, max | D664 | <0.5 |
| Sulfur content ppm | D2622 | <15 |
| Cloud Point °C | D5773 | <-15 |
| Pour Point °C | D97 | <-40 |
| Electrical Conductivity pS/m | D2624 | >2,000 |
| Copper Strip Corrosion max | D130 | No. 3 |
| Steel Corrosion | D665 | Pass |
| Lubricity HFRR @ 60 °C micron max | D6079/D7688 | 520 |



Planned RD/Biodiesel Blend Field Test

Goals:

- Demonstrate RD/BD blends can be used reliably;
- Identify any equipment adjustments needed.

Plans:

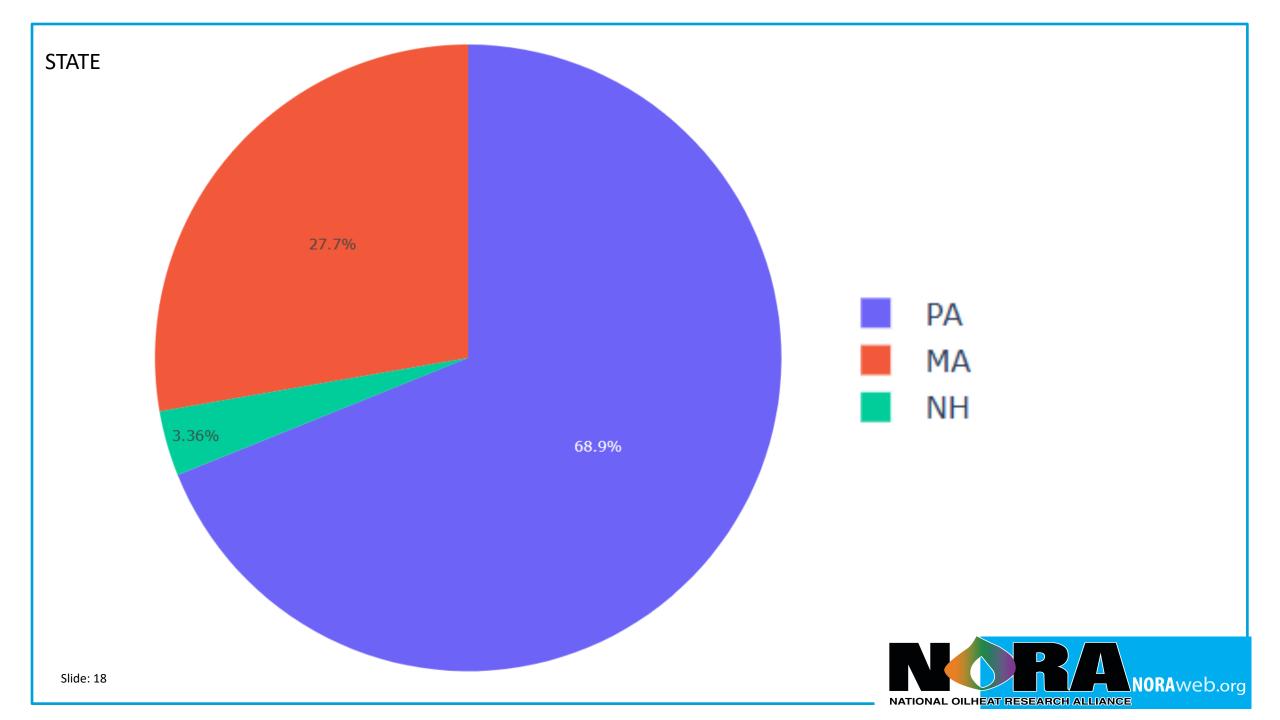
- Up to 150 sites in Mass. And PA
- Chevron REG will supply the fuel
- Sites will be divided into Level 1 (intense monitoring) and Level 2 (track service only)
- Through the 2024/2025 heating season
- Target a wide variety of equipment types and manufacturers
- Detailed report on results and future potential

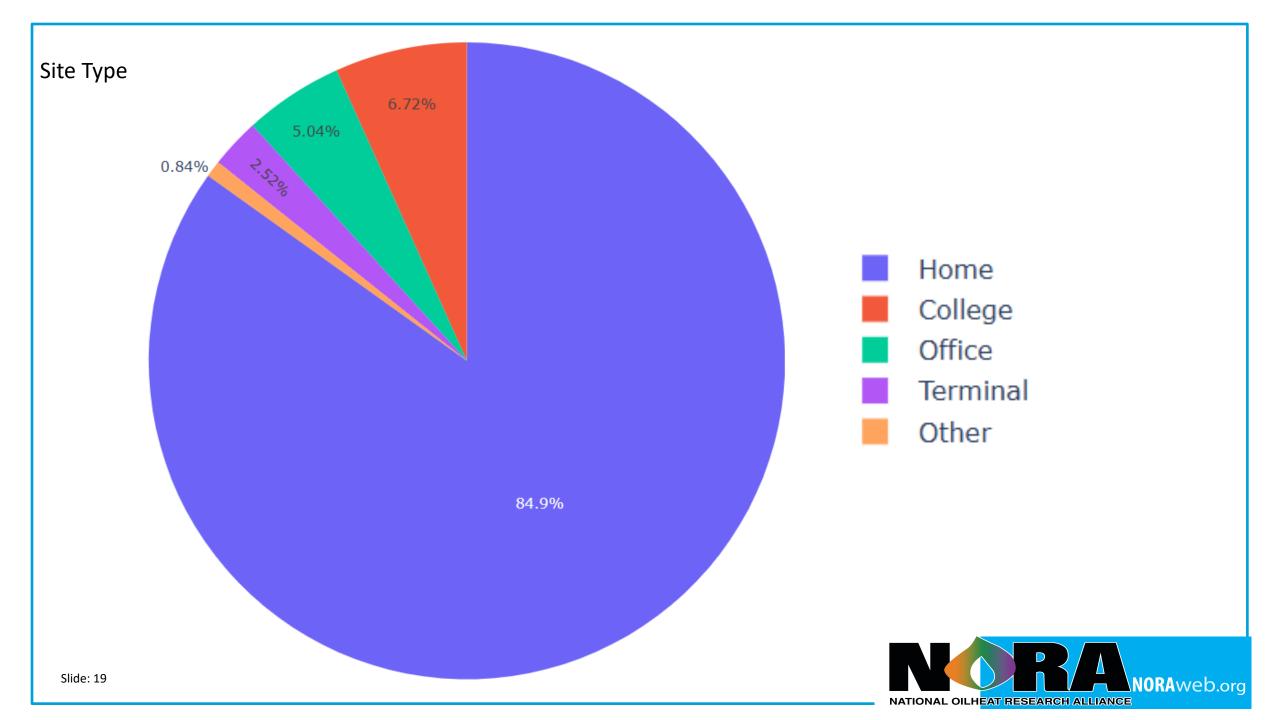


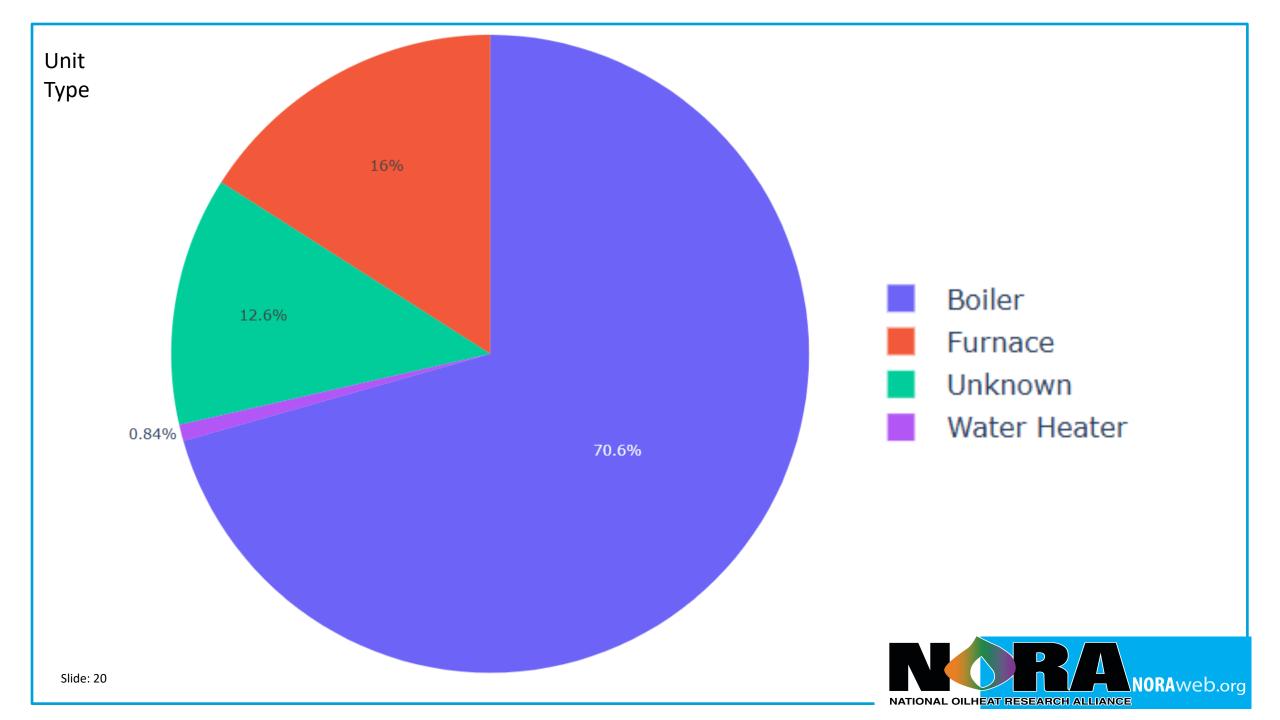
NORA Lab Work in Advance of Field Tests

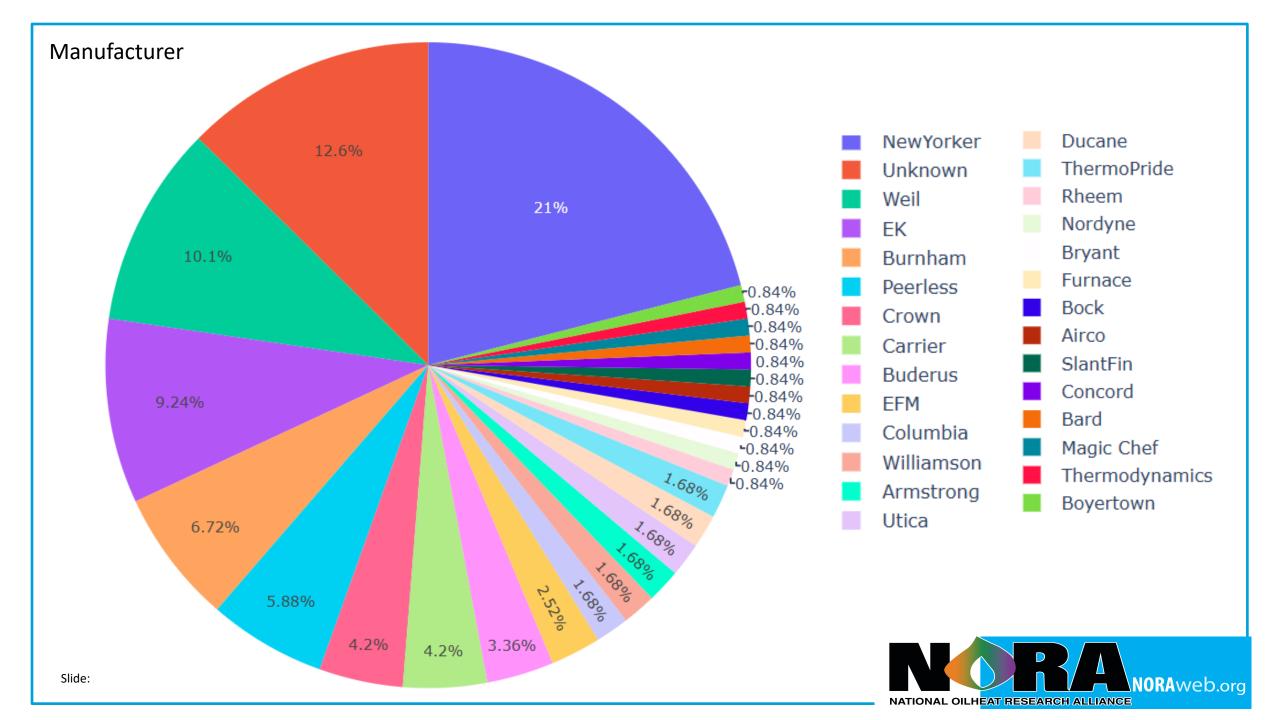
- Pump cycle testing both biodiesel rated pumps and "legacy" pumps
- Combustion testing focus on transition from B5—B100 & flame sensor response
- Head coking tests

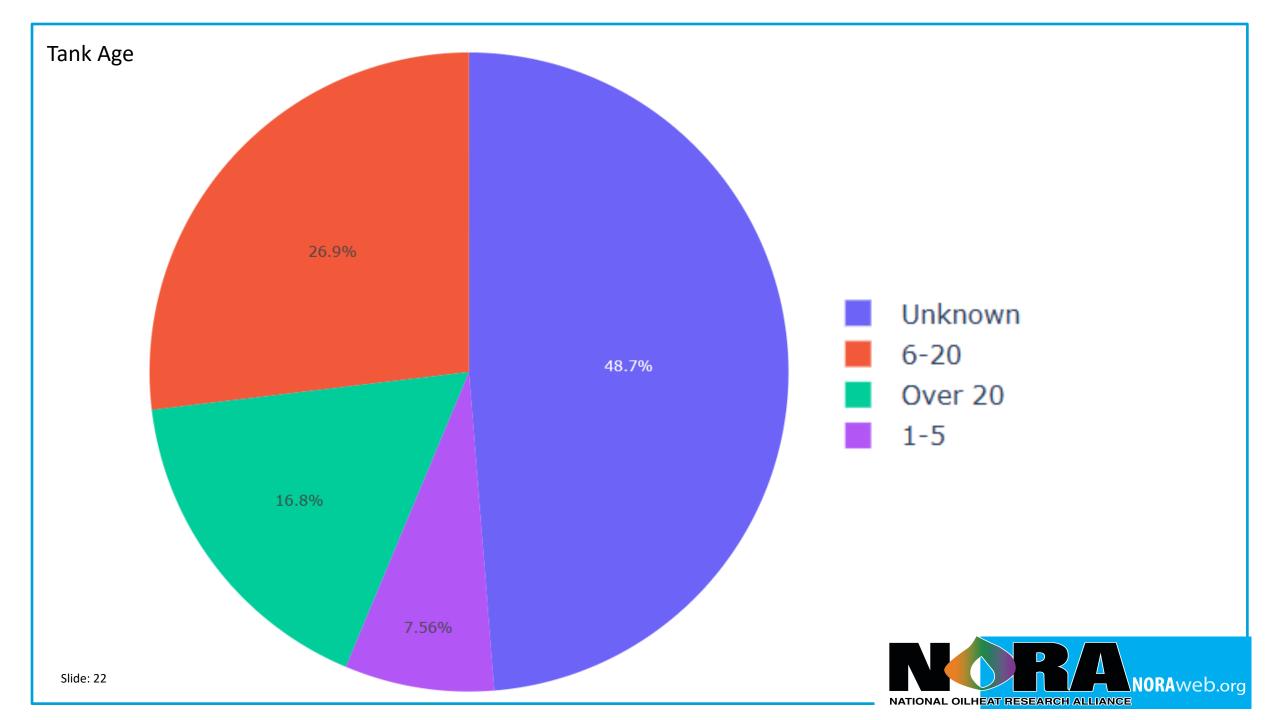












Conferences / Presentations / Papers

- ASHRAE June 2024 B100 Net Zero Home Concept
- IASH (Int. Assoc. for Storage & Handling of Liquid Fuels)
 Sept 2024 EL
- CT DEEP Hearing on the State ACT Implementation
- Net Zero Home with B100 Paper
- Filtration NORA report completed
- ASHRAE Seminar Proposal for upcoming Winter Meeting



Summer Research Internships

Derek Huang – Stony Brook University Santino Decarolis -SUNY Morrisville



Thank you! NORA R&D Team



NORA Education Update

Bob O'Brien Newport, RI

September 23rd, 2024





BPI Test Center

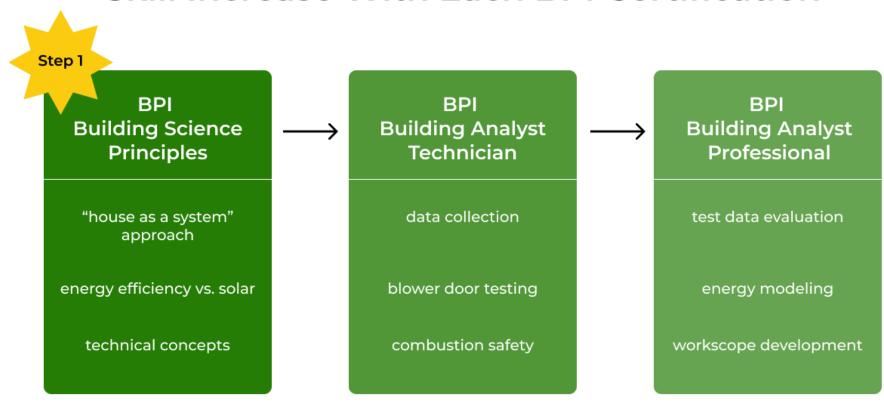


- NORA is a Certified BPI Test Center!
- Energy Audits- T
- Modeling & Evaluation- P



BPI Pathway

Skill Increase With Each BPI Certification





NORA/BPI

- State /Federal/Utility programs
- Diversification opportunity
- BPI Standards Technical Committee
 - JL & RO
- Chair of BPI STC effective 1/24





Micro-credentials?

- Fast
- Affordable
- Stackable
- Demand





New Schools

- Greenfield Community College
- Trades Up
- Suffolk BOCES West
- Washington County CC*
- Van Buren Tech Center HS*
- Nassau BOCES*
- Dead River-NH *





SUNY Morrisville



- Both 2 & 4 year programs leading to associates or bachelors in renewable energy.
- 90% in bachelors program
- NORA Bronze curriculum will be delivered over two semesters in two 3 credit classes
- Began March 2024- Soft launch
- Kickoff- October 24th



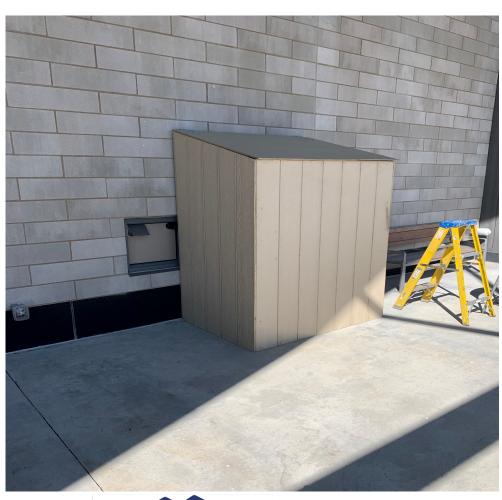
SUNY Morrisville

- Students will install Granby boiler as a project
- All renewable fuels
- B100 then
- Renewable diesel?





SUNY Morrisville



- Well insulated, heated enclosure
- Granby 2n1 double wall poly
- B100
- Temperature monitored & logged
- Top, mid & bottom of enclosure
- Fuel line and internal tank temperature
- Tank heater in future



Curriculum Updates

- New Vendor- ESCO
- Print on Demand/Fulfillment
- E-Book
- Audiobook
- Gold Manuals?





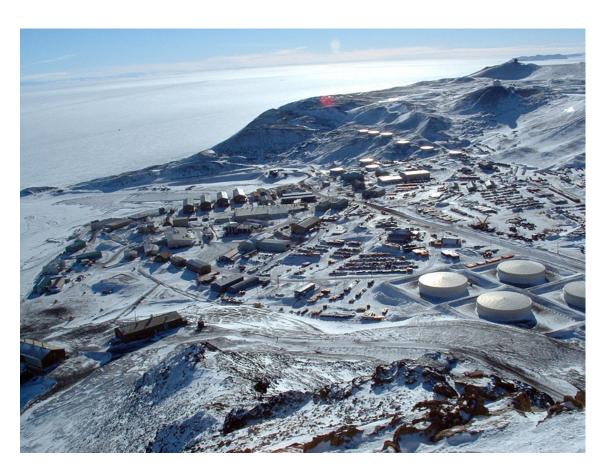
GOLD Certification



- Airflow, Steam
 Hydronics, Efficiency,
 Tanks & Venting
- New Class
- Renewable Liquid Fuels



US Antarctic Project





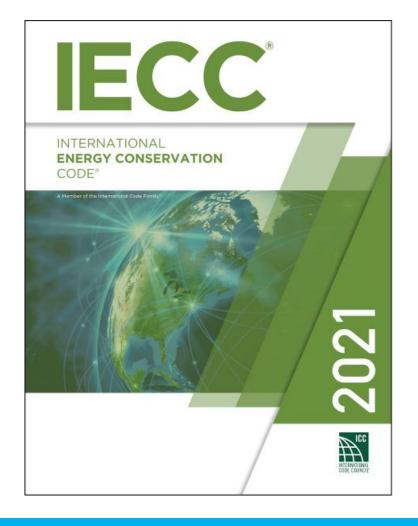


NORA Code Committee

Reps from across industry

Formulate plan to promote renewable liquid fuels as a decarbonization option

Organize a defensive strategy against anti-combustion and anti-renewable fuel proposals





Appeals

- AGA and AHRI among others filed appeals
- Electrification infrastructure & Efficiency Options
- Appeal board declined appeals
- Executive board overruled
- Electrification to appendix
- Efficiency to reference
- State Battlegrounds





Technical Resource Center

- Continually updateable
- OEM bulletins & guides
- OEM videos
- NORA generated content
- Short task-oriented videos
- "Living addendum"
- Social Media

























