



NORA Board Meeting  
Harrah's Waterfront Conference Center  
Room 23, Avalon Ballroom  
May 22nd, 2023  
3:30 pm

- I. Introduction – Chairman Roger Marran
- II. Approval of Minutes
- III. Financial Information –
- IV. NORA 2022 Activities – President Michael Devine
  - IECC Activities – Update on 2023 activities
  - Net Zero Home – State updates
  - In the Loop – NORA Podcast Series
  - SUNY Morrisville – NORA Education Opportunities
  - NORA-CFAA Collaboration – High Blends Testing, High Blends Infrastructure Workshops, CSR Bootcamp
- V. Research and Development – Director of Laboratory Dr. Thomas Butcher
- VI. Education and Training – Bob O'Brien
- VII. Executive Committee & Officers for 2023
- VIII. Old Business –
- IX. New Business –
- IX. Adjournment



NORA Board Meeting  
Rhode Island Convention Center  
Room 557  
September 27th, 2022  
3:00 pm

- I. Introduction – Chairman Roger Marran & President Michael Devine called the meeting to order at 3:35 pm.

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

|                     |                  |
|---------------------|------------------|
| Allison Heaney      | Charlie Uglietto |
| Claudette Townsend  | Eric DeGessero   |
| Gary Sippin         | Kate Duffy       |
| Mario Bouchard      | Rick Bologna     |
| Roger Marran        | Brent Moore      |
| David Coyne         | Randy Groft      |
| Bobby Parlet        | Steve Oehlert    |
| Matt Cota           | Bobby Parlet     |
| Carter Vaillancourt | Justin Jeffers   |
| Kristyn Schweitzer  | Will Berry       |
| J.W. Hackett        |                  |

- II. Approval of Minutes – A motioned was made by Allison Heaney and was seconded by Rick Bologna, the minutes of the previous meeting were approved and submitted.

- III. Financial Information – Accountants Navy Djonovic & Cecilia Rubio

- a. **NORA 2021 Audited Financials Completed** – Navy Djonovic and Michael Devine guided the members of the NORA Board through the Annual NORA Audit, which was conducted through Ross, Langan & McKendree LLP. The audit process was delayed a bit initially due to the process of closing out the 2021 books and as well as additional analysis required by the auditor in response to classification errors noted for receipts and disbursements by the accounting firm. The following material misstatements detected as a result of audit procedures were corrected by management:

- To reclassify state expenses for coding errors – approximately \$186,000
- To reclassify expenses for differences with accounting principles generally accepted in the United States of America – approximately \$174,000

Following a brief discussion, the 2021 NORA Audit was accepted as presented.

- b. **2022 Financial Statements** – Navy Djonovic and Michael Devine updated the NORA Board on the current NORA financial statements through August 31, 2022. NORA operated at a deficit of \$1.3 million 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. Collections were approximately \$5.3 million for the first eight months of the year. This represents 64% of budgeted annual collections. Based on current trends, we expect to be in line with budget by the end of the calendar year. The annual escrow is calculated at year end and will continue to be reflected as a variance throughout the year. Central program expenses of \$1.2 million are behind budget by \$364,000 through August 31<sup>st</sup> as the expenses were not incurred. State R&D program expenses of \$3.45 million are over budget by \$405,000 due to the \$1 million additional funds allocated in 2021 and 2022, respectively.

The unallocated or non-programmatic expenses are approximately \$192,000 as compared to an annual budget of \$352,000. We expect some of the expenses to be incurred in the remainder of the year which will result in reducing the variance. As of August 31, 2022, the NORA Statement of Financial Position continues to be very strong with \$12.9 million in available cash and \$3.8 million in escrow. This is offset by \$6.2 million in grants payable to the participating states and \$433,000 in other current liabilities. Accounts payable is current as are the other accrued expenses. Net assets are in excess of \$10.2 million.

#### IV. NORA 2022 Activities – President Michael Devine

- **NORA Escrow Account** – Bank of America informed NORA that they would no longer be offering the escrow services for the NORA escrow account, due to the fact that they had made a business decision to get out of the escrow side of their business. NORA has been actively consulting with our attorneys Squire Patton & Boggs and our accounting firm Maier, Markley & Justice, to identify the right lending institutions to transfer the escrow account, whereby ensuring that the NORA statute is being honored while also protecting the safety and security of the funds.
- **IECC Activities** - NORA has been engaged in the 2024 IECC building code changes process. Bob O'Brien has been on point attending the weekly IECC meetings and keeping all of us updated on any changes that are being made through their announcements. NORA is currently considering submitting written comments to the residential committee of the IECC, in opposition to the proposed appendix inclusions of an electric-only heating energy source. With the recent passage of the Inflation Reduction Act, NORA feels that there is no reason whatsoever to limit home heating to one source only, as the Federal Government has sought to provide new equipment rebates to home heating equipment that is approved for B20 Heating Fuels.
- **NORA 101 & External Outreach** – Michael Devine shared with the NORA Board of Directors that he has either participated in or is planning on participating at 23 state and industry events in 2022 to introduce himself as the new NORA President and to provide a NORA 101 on the basic structure and mission of NORA. This opportunity also provides the opportunity for Michael to share NORA's current R&D initiatives, rebate programs and education activities. Perhaps most important opportunity is to listen to the input provided by those in attendance as they share their ideas of how we can make positive improvements to NORA and our industry.
- **Net Zero Home** - On July 19<sup>th</sup> NORA issued a press release on the Net Zero Carbon House. Through that press release, we received responses from Vermont and

Connecticut for more information on the Net Zero House. We also provided the FMANJ with a presentation to their BOD on the NET Zero House. The NORA team is in the process of creating a check list of items, including developing a series of process documents, additional Insured Coverage through the retailer, a Liability Disclosure, and a NZCH checklist for the retailer to identify good candidates.

- **GHG Calculator** - The NORA team has been actively providing presentations for the GHG Multivariable Calculator into the market through face to face presentations at the following state associations in MA, CT, NY & NJ. Don Farrell has created individual state one-page infographics, highlighting the benefits of the data created in a simple and easy to understand format. Richard Sweetser submitted an article for review to ASHRAE, regarding his GHG Multivariable calculator and the article was approved for the conference.
- **NORA-CFAA Collaboration** - CFAA & NORA are collaborating on a series of Technical Projects over the next year. CFAA has agreed to provide NORA with \$350,000 dollars in funding to execute these projects, NORA will be providing CFAA with monthly status updates and progress of these projects. We are also collaborating on an OEM Workshop on October 25<sup>th</sup>, in Hartford Connecticut. The goals of the workshop are to provide the OEM's and burner manufacturers an update on the projects that NORA is focused on and to get a sense of how they see the development of the industry pushing towards higher blends of renewable fuels.
- **Bioheat Trademark Agreement** – NORA & CFAA are in the final stages of introducing an updated version of the Bioheat Trademark Agreement. Over the past 10+ years there have been many changes in the biodiesel and liquid heating industry, which warrant an update to the agreement. NORA & CFAA will continue to collaborate on any new changes that may occur in the renewable fuels landscape, while supporting the retail marketer's effort to improve the carbon intensity of the fuels they distribute.
- **OEM Workshop** - On October 25<sup>th</sup> NORA & CFAA will be hosting the liquid fuels industry's OEMs for a workshop entitled "The Future of Liquid Fuel Heating Workshop" at the Sheraton Bradley Airport Hotel, in Windsor Locks, Connecticut. The event will be sponsored by the Clean Fuels Alliance America through the Nebraska Soybean Board. There are nine educational presentation tracks during the workshop as well as a planned & candid discussion regarding the barriers to achieving 100% renewable fuels.

V. Research and Development – Director of Laboratory Dr. Thomas Butcher – Currently the NORA lab is engaged in several projects, they include:

- Advancing Biodiesel and Renewable Diesel Testing
- Ethyl Levulinate (EL) Testing
- SMTI Fuel-Fired Heat Pump Project
- ACT Burner Development Project
- Efficiency / Rebate Heat Pump Impact Project
- Zero GHG Home Concept

Dr. Butcher provided the NORA Board with a PowerPoint presentation, describing in detail the work that is being preformed for each of these projects and initiatives, with particular emphasis on the preliminary findings regarding the head coking deposits that we are finding in higher blend testing.

- VI. Education and Training – Director of Education Robert O’Brien – Currently the NORA Education Team is conducting the outreach to highlight the new NORA Technicians Manual. Bob and his team are also producing an online version of the manual, which also has a voice over, to help our students understand the material better. With the recent passage of the Inflation Reduction Act, Bob and the team have identified new opportunities for strengthening the service department through the Hope for Homes provisions, we will be looking into how the NORA Education Program might be able to add new certifications through the Building & Performance Institute (BPI).
  - VII. Executive Committee & Officers – There were no changes to the current Board of Directors or members of the Executive Committee.
  - VIII. Old Business – Ohio Activity Update – Michael Devine provided the NORA Board with an update that the Ohio Energy & Convenience Association (OECA) has taken over the liquid heating activities in the state. OECA have developed a series of program activities that will create consumer marketing materials, a greater web presence for liquid heating and institute an equipment rebate program. OECA has hired an Ohio marketing firm and they have begun to utilize their NORA funds; we expect significant progress to be made.
  - IX. New Business –
- IX. Adjournment – Motion made by Charlie Uglietto, seconded by Allison Heaney



**Internal Financial Statements**  
**For the Three Months Ended March 31, 2023**



No assurance is provided on these financial statements.

National Oilheat Research Alliance, Inc.  
Internal Financial Statements  
March 31, 2023

|                                       | <u>Pages</u> |
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No assurance is provided on these financial statements.

National Oilheat Research Alliance, Inc.  
Financial Summary  
For the Three Months Ended March 31, 2023

NORA operated at a deficit of \$1.6 million for the first three 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.

Collections were approximately \$3.1 million for the first three months of the year. This represents 37.74% 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 \$521K are behind budget by \$1.1 million through March 31<sup>st</sup> as the expenses were not incurred.

States and Rebates program expenses of \$2.9 million and \$1.1 million, respectively, are within budget as a result of recording the state program expenses in their entirety up front as noted above. In addition, as of March 31<sup>st</sup>, the states have not utilized their remaining balance of the \$1 million additional funds allocated in 2021 and 2022, respectively.

The Unallocated or non-programmatic expenses are approximately \$69K as compared to an annual budget of \$352K. We expect the expenses to be incurred in the remainder of the year which will result in reducing the variance.

As of March 31, 2023, the NORA Statement of Financial Position continues to be very strong with \$10.95 million in available cash and \$5.9 million in escrow. This is offset by \$7.6 million in grants payable to the participating states and \$788k in other current liabilities. Accounts payable is current as are the other accrued expenses. Net assets are in excess of \$11.4 million.

Assessments Receivable of \$2.8 million represents amounts due from customers. The uncollected balance as of May 18<sup>th</sup> is \$199K, which is expected to be collected.

During August 2022, NORA entered into a \$350,000 contract with Clean Fuels Alliance America (“CFAA”) for Research Development. NORA received the first installment of \$200,000 during October 2022 and the second installment of \$150,000 during November 2022. As of March 31, 2023, NORA has incurred \$111,086 in expenses; \$77,948 during 2022 and \$33,138 during 2023. The remaining balance of \$238,914 is classified as deferred contract revenue on the Statement of Financial Position.



National Oilheat Research Alliance, Inc.  
Statements of Financial Position  
March 31, 2023 and December 31, 2022

| ASSETS  |                |                   |
|---|----------------|-------------------|
|   | March 31, 2023 | December 31, 2022 |
| CURRENT ASSETS:   |                |                   |
| Cash  | \$ 10,952,581  | \$ 9,887,843      |
| Cash Held in Escrow   | 5,944,565      | 5,944,434         |
| Assessments Receivable  | 2,834,950      | 2,656,113         |
| Security Deposit  | 24,514         | 24,514            |
| Prepaid Assets  | 13,319         | 10,483            |
| Inventory - Technicians Manual                                      | 36,535         | 53,098            |
| Total Curent Assets   | 19,806,465     | 18,576,485        |
| PROPERTY AND EQUIPMENT:   |                |                   |
| Office Furniture and Equipment                                      | 80,076         | 80,076            |
| Website   | 45,450         | 45,450            |
| Computer Equipment  | 3,819          | 3,819             |
| Less: Accumulated Depreciation                                      | (82,924)       | (82,862)          |
| Less: Accumulative Amortization (Web Site)                          | (45,450)       | (45,450)          |
| Total Property and Equipment  | 971            | 1,033             |
| TOTAL ASSETS  | \$ 19,807,435  | \$ 18,577,518     |
| LIABILITIES AND NET ASSETS  |                |                   |
| LIABILITIES:  |                |                   |
| Grants Payable:   |                |                   |
| State Rebate Obligations - Education                                | \$ 2,332,759   | \$ 1,066,797      |
| State Rebate Obligations - R&D                                      | 1,121,827      | 790,597           |
| State Rebate Obligations - Energy Efficiency                        | 824,399        | 337,427           |
| State Rebate Obligations - Rebates                                  | 3,293,960      | 2,233,076         |
| Total Grants Payable  | 7,572,945      | 4,427,897         |
| Other Current Liabilities:  |                |                   |
| Accounts Payable  | 348,842        | 328,890           |
| Accrued Expenses  | 29,492         | 63,365            |
| Accrued Salaries & Benefits   | 16,983         | 59,697            |
| Deferred Rent   | 3,287          | 3,287             |
| Deferred Contract Revenue   | 238,914        | 272,052           |
| Refunds Payable   | 150,000        | 390,530           |
| Total Other Current Liabilities                                     | 787,519        | 1,117,821         |
| Total Current Liabilities   | 8,360,463      | 5,545,718         |
| NET ASSETS:   |                |                   |
| Unrestricted Net Assets   | (243,712)      | 1,341,116         |
| Pre-2014 Reauthorization Net Assets                                 | 55,933         | 55,933            |
| Unavailable for Obligation until 10/01/2028                         | 5,947,053      | 5,947,053         |
| National Spending Not Yet Incurred:                                 |                |                   |
| Research, development, and demonstration - not yet obligated        | 5,329,230      | 5,329,230         |
| Research, development, and demonstration - obligated under contract | 67,594         | 67,594            |
| Heating oil efficiency and upgrade - not yet obligated              | 145,880        | 145,880           |
| Consumer education, safety, and training - not yet obligated        | 144,994        | 144,994           |
| Total Net Assets  | 11,446,972     | 13,031,800        |
| TOTAL LIABILITIES AND NET ASSETS                                    | \$ 19,807,435  | \$ 18,577,518     |

No assurance is provided on these financial statements.

National Oilheat Research Alliance, Inc.  
Statements of Activities  
Budget vs. Actual  
For the Three Months Ended March 31, 2023

|   | YTD Actual<br>3/31/23 | Percentage | Annual Budget<br>2023 | Variance              | Actual<br>2022      |
|---|-----------------------|------------|-----------------------|-----------------------|---------------------|
| <b>REVENUE:</b>                                   |                       |            |                       |                       |                     |
| Collections and Assessments:                      |                       |            |                       |                       |                     |
| Collections                                       | \$ 3,069,813          | 37.74%     | \$ 8,133,760          | \$ (5,063,947)        | \$ 9,447,694        |
| Refunds   | (84,859)              |            | -                     | (84,859)              | (1,036,635)         |
| Escrow  | -                     |            | (2,033,440)           | 2,033,440             | -                   |
| Net Collections                                   | <u>2,984,954</u>      |            | <u>6,100,320</u>      | <u>(3,115,366)</u>    | <u>8,411,059</u>    |
| <b>EXPENSES:</b>                                  |                       |            |                       |                       |                     |
| Program Expenses:                                 |                       |            |                       |                       |                     |
| Consumer Education and Training (Max. 30%)        | 1,554,916             |            | 1,803,096             | (248,180)             | 1,713,841           |
| Education and Training (Central)                  | 31,820                |            | 280,000               | (248,180)             | 164,454             |
| Education and Training (States)                   | 1,523,096             |            | 1,523,096             | -                     | 1,549,387           |
| Research Development and Demonstration (Min. 30%) | 1,007,318             |            | 1,803,096             | (795,778)             | 2,621,146           |
| Research Development and Demonstration (Central)  | 474,222               |            | 1,270,000             | (795,778)             | 1,668,433           |
| Research Development and Demonstration (States)   | 533,096               |            | 533,096               | -                     | 952,713             |
| Home Energy Efficiency Program (Min. 15%)         | 856,922               |            | 901,548               | (44,626)              | 901,500             |
| Home Energy Efficiency Program (Central)          | 15,374                |            | 60,000                | (44,626)              | 31,652              |
| Home Energy Efficiency Program (States)           | 841,548               |            | 841,548               | -                     | 869,848             |
| Total Central                                     | <u>521,417</u>        | 32.39%     | <u>1,610,000</u>      | <u>(1,088,583)</u>    | <u>1,864,539</u>    |
| Total States                                      | <u>2,897,740</u>      | 100.00%    | <u>2,897,740</u>      | <u>-</u>              | <u>3,371,948</u>    |
| State Rebates                                     | <u>1,101,080</u>      | 100.00%    | <u>1,101,080</u>      | <u>-</u>              | <u>1,178,557</u>    |
| Office Unallocated Expenses:                      |                       |            |                       |                       |                     |
| Salaries and Consulting                           | 23,388                |            | 165,000               | (141,612)             | 110,883             |
| Accounting  | 4,965                 |            | 35,000                | (30,035)              | 30,778              |
| Insurance   | 9,757                 |            | 15,000                | (5,243)               | 13,492              |
| Taxes   | 1,172                 |            | 3,000                 | (1,828)               | 2,091               |
| Postage   | 197                   |            | 1,500                 | (1,303)               | 2,249               |
| Web Pages   | 2,686                 |            | 15,000                | (12,314)              | 11,701              |
| Rent and Telephone                                | 545                   |            | 20,000                | (19,455)              | 3,809               |
| Travel  | 2,704                 |            | 1,000                 | 1,704                 | 2,465               |
| Meeting Expenses                                  | -                     |            | 3,000                 | (3,000)               | -                   |
| Office Supplies                                   | -                     |            | 1,000                 | (1,000)               | -                   |
| Dues & Memberships                                | -                     |            | 1,000                 | (1,000)               | -                   |
| Bank Fees   | 2,142                 |            | 6,000                 | (3,858)               | 7,093               |
| Legal Expense                                     | 21,000                |            | 80,000                | (59,000)              | 84,000              |
| Payroll Processing Fees                           | 726                   |            | -                     | 726                   | 4,659               |
| Misc. Expense                                     | -                     |            | -                     | -                     | 2,726               |
| Equipment Maintenance                             | 62                    |            | 5,000                 | (4,938)               | 206                 |
| Total Office Unallocated Expenses                 | <u>69,343</u>         | 19.73%     | <u>351,500</u>        | <u>(282,157)</u>      | <u>276,152</u>      |
| General and Special Projects:                     |                       |            |                       |                       |                     |
| Assessment and Collection Costs                   | 24,176                |            | 90,000                | (65,824)              | 171,238             |
| Annual Report                                     | 2,302                 |            | 45,000                | (42,698)              | 66,263              |
| Total General and Special Projects                | <u>26,478</u>         |            | <u>135,000</u>        | <u>(108,522)</u>      | <u>237,501</u>      |
| Other Expenses/(Income):                          |                       |            |                       |                       |                     |
| Interest Income                                   | (13,138)              |            | (5,000)               | 8,138                 | (26,616)            |
| Contract Revenue                                  | (33,138)              |            | -                     | 33,138                | (77,948)            |
| Other Income                                      | -                     |            | -                     | -                     | (828)               |
| Total Other Expenses/(Income)                     | <u>(46,275)</u>       |            | <u>(5,000)</u>        | <u>41,275</u>         | <u>(105,392)</u>    |
| Net deficit                                       | <u>\$ (1,584,828)</u> |            | <u>\$ -</u>           | <u>\$ (1,584,828)</u> | <u>\$ 1,587,754</u> |

No assurance is provided on these financial statements.

# NORA Research Update

Board of Directors Meeting  
Eastern Energy Expo  
Atlantic City, N.J.  
May 2023

Tom Butcher, Technical Director  
National Oilheat Research Alliance

# B100 Field Testing

How does fuel quality holdup over time?  
How does B100 use affect the equipment?

## Measurements:

- Excess air change with conversion;
- Document component failures / leakage;
- Change in fuel Oxidative Reserve and acid number over time;
- Fuel cleanliness at the pump;
- Burner head condition over time.



# B100 Field Testing

Long Island– 12 sites, including some “prototype” equipment;  
Mass. – 7 sites, a distilled biodiesel.

## Key Findings:

- During the heating season, with regular fuel deliveries, oxidative reserve and acid number remain at reasonable level;
- Over summer fuel degrades more but still not a large concern;
- On Long Island – high filterable particulates in bleeder samples;
- In Mass. – fuel quality “perfect”;
- Head coking higher than considered acceptable, even with distilled fuel;
- Seek to ramp up to 100 field sites.

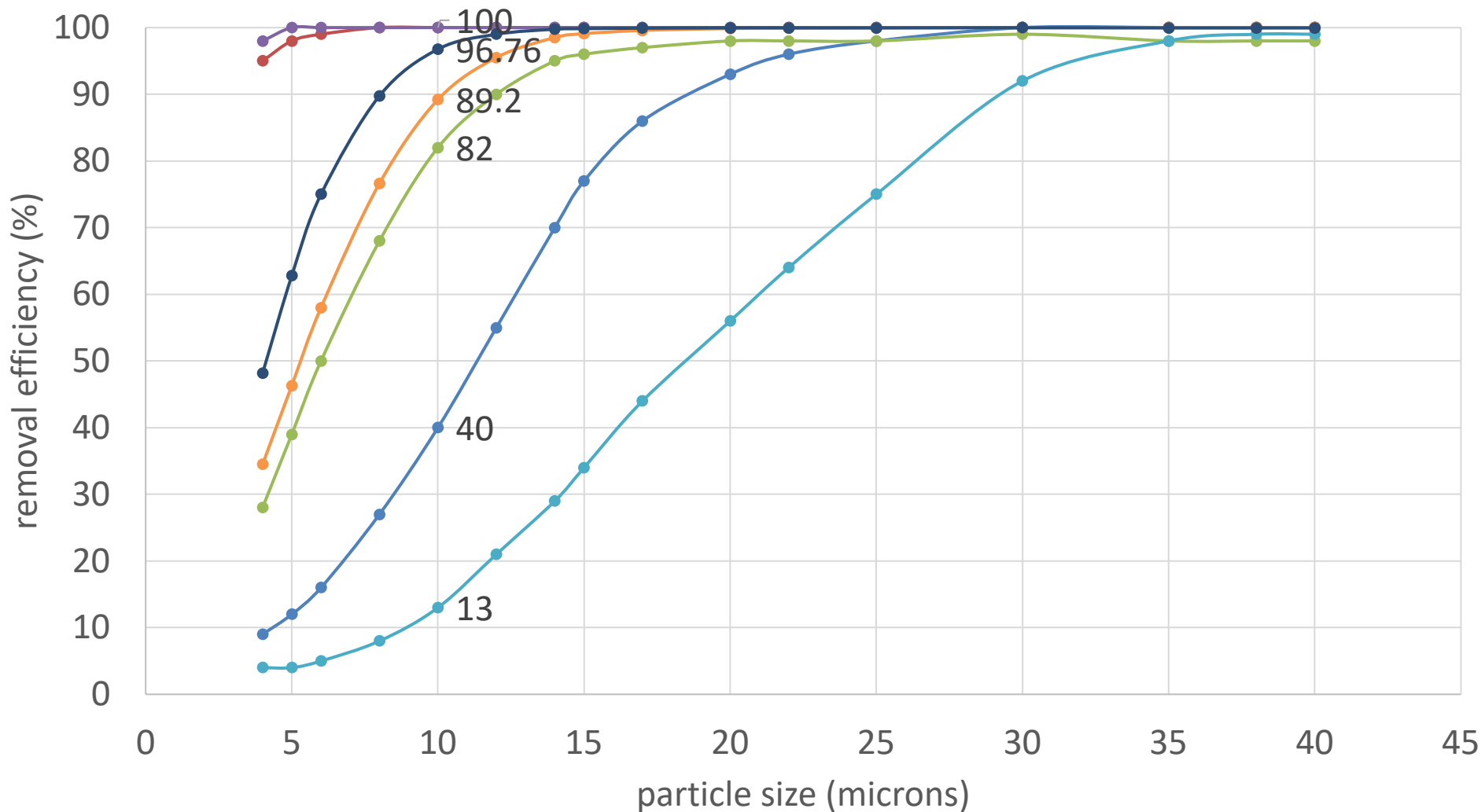


# Filterable Particulates

- We have been observing “dirty” fuels in the field in all of our field testing;
- A solution we have found to be effective for “seized pumps” involves dual filtration in combination with a one-pipe system;
- NORA commissioned a set of filter efficiency tests at SwRI;
- We are adding a new instrument to our lab to measure particle count vs size.



# Measured Filtration Efficiency



# In-Lab Head Coking Test

- Four days - 60 second on/off cycle, total 300 cycles;
- Mass and visual based evaluation;
- Enables “rapid” evaluation of a broad range of conditions under controlled conditions;
- In combination with an intern, Masters Thesis project at Stony Brook U.



# In-Lab Head Coking Test

- Different types of biodiesel
- Renewable diesel and a range of blends;
- Wide range of appliance types and control settings;
- Fuel Pressure
- Range of cycling patterns;
- Impact of added refractory;
- Planning to strongly ramp-up rate of testing – added fuel storage and running multiple appliances in parallel.

# In-Lab Head Coking Test

No. 2 oil



B100





# Expanding Fuel Storage in Plainview

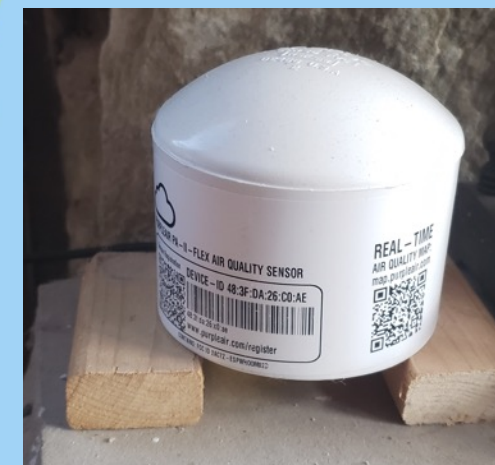
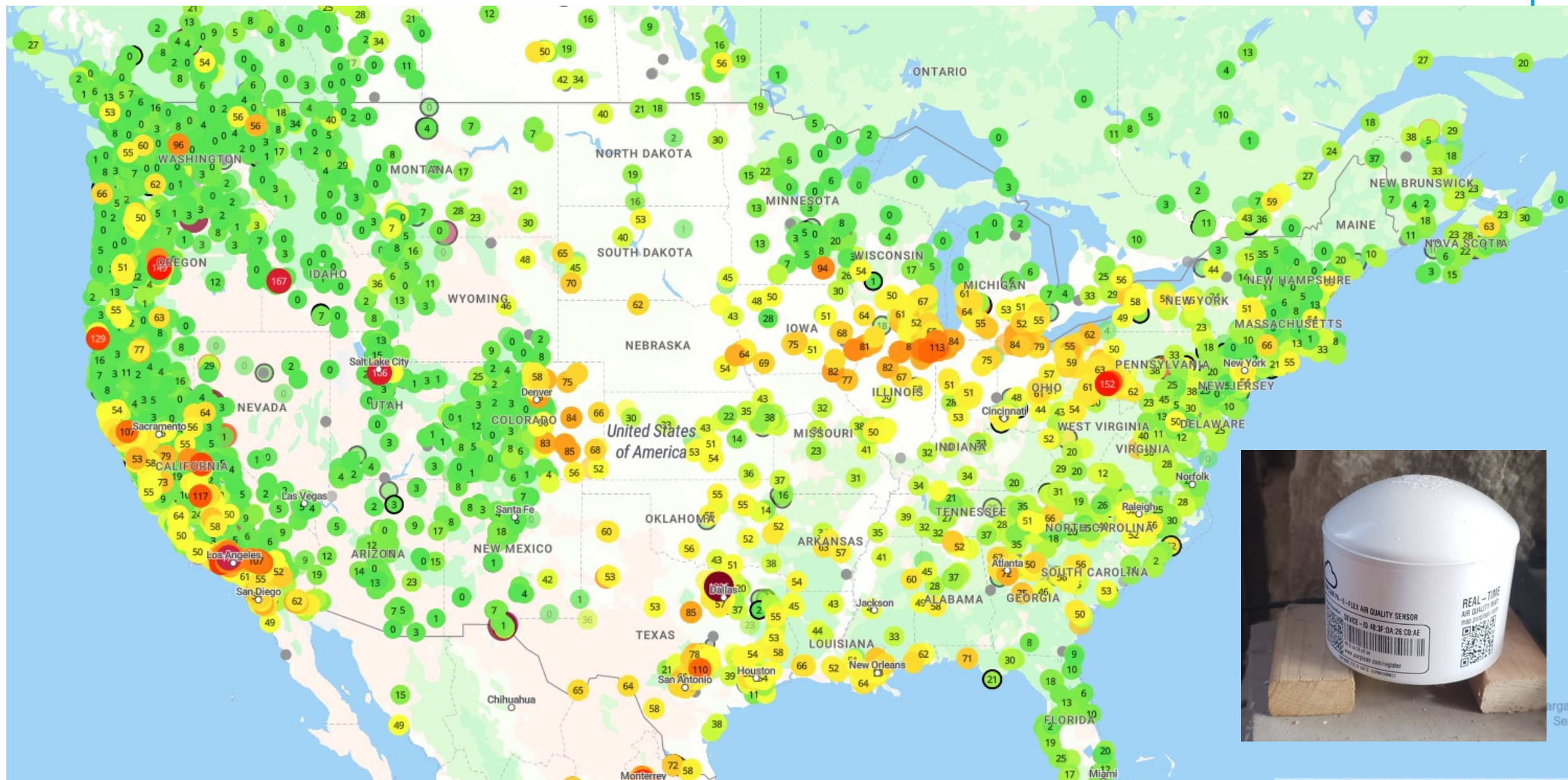


Slide: 9

# Air PM and Oilheat-Key Question

How much impact do liquid fuel-fired heating systems have on indoor air particulate concentration?





# Key Findings

- Outside PM typically higher than inside (except during cooking operations)
- Outside PM peaks during times when wood use is expected to be high
- Inside PM near fireplace or woodstove may or may not be very high
- Cooking operations lead to the highest indoor PM
- PM around the liquid fuel-fired heating appliance consistently the lowest.

# Other Projects

- EL- work on ASTM specs in progress, plan to present at ASTM Meeting in June;
- Modulating burner for SMTI ammonia/water heat pumps;
- Electric heaters for outdoor B100 tanks – collaboration with CEMA;
- RD and blends combustion, elastomer, and pump testing;
- ACT – modulating B100 burner.

# Thank you! NORA R&D Team

- Tom Butcher
- Neehad Islam
- Ryan Kerr
- Michael Persch
- Robert O'Brien
- Jenny Frank



| <b>2023 NORA Board of Directors</b> | <b>2023 NORA Executive Committee</b> | <b>2023 NORA Officers</b> |
|-------------------------------------|--------------------------------------|---------------------------|
| Roger Marran                        | Executive Committee Member           | Chairman                  |
| Kate Duffey                         | Executive Committee Member           | Vice Chairman             |
| Rick Bologna                        | Executive Committee Member           | Past Chairman             |
| Eric DeGessero                      | Executive Committee Member           | Treasurer                 |
| Michael Devine                      | Executive Committee Member           | President                 |
| Charles Uglietto                    | Executive Committee Member           |                           |
| Allison Heaney                      | Executive Committee Member           |                           |
| Claudette Townsend                  | Executive Committee Member           |                           |
| Leann Pannebianco                   | Executive Committee Member           |                           |
| Mario Bouchard                      | Executive Committee Member           |                           |
| Sandra Farrell                      | Executive Committee Member           |                           |
| Matt Cota                           | Executive Committee Member           |                           |
| Daniel Mattice                      | Executive Committee Member           |                           |
| Steve Clark                         | Executive Committee Member           |                           |
| Gary Sippin                         | Executive Committee Member           |                           |
| Jacqueline Hart                     | Executive Committee Member           |                           |
| John McCusker                       | Executive Committee Member           |                           |
| Ted Noonan                          | Executive Committee Member           |                           |
| Scott Hacker                        |                                      |                           |
| Steve Powers                        |                                      |                           |
| Bill Reichert Jr.                   |                                      |                           |
| Carter Vaillancourt                 |                                      |                           |
| Justin Jeffers                      |                                      |                           |
| David Coyne                         |                                      |                           |
| Steve Oehlert                       |                                      |                           |
| Greg Childs                         |                                      |                           |
| Brent Moore                         |                                      |                           |
| Katie Foster                        |                                      |                           |
| Randy Groft                         |                                      |                           |
| Doug Fredericks                     |                                      |                           |
| Bobby Parlett                       |                                      |                           |
| Chris Fazio                         |                                      |                           |
| Hal Johnson                         |                                      |                           |
| Micahel Lamperelli                  |                                      |                           |
| Mike Van Doren                      |                                      |                           |
| Krystyn Schweitzer                  |                                      |                           |
| Dave Walton                         |                                      |                           |
| Scott Vandino                       |                                      |                           |
| Levi Bourne                         |                                      |                           |
| Mark Caspers                        |                                      |                           |

# NORA Education Update

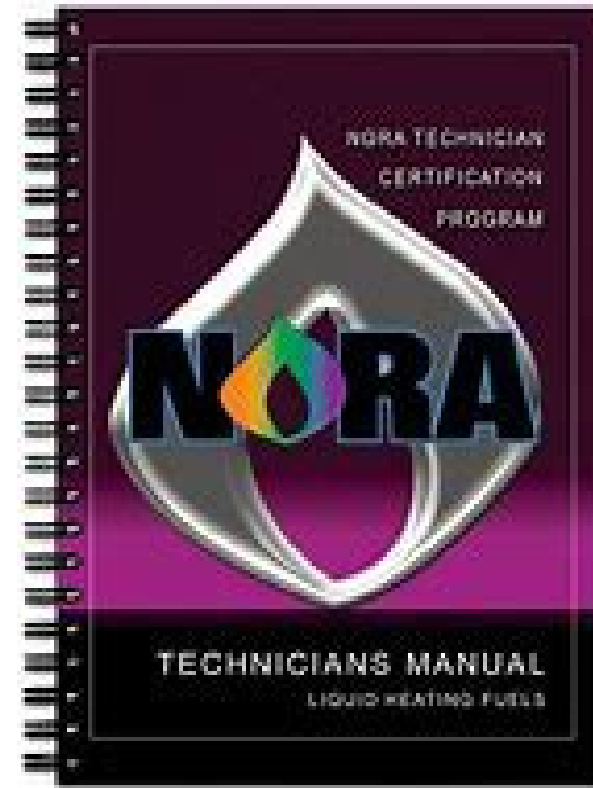
Bob O'Brien

May 22, 2023



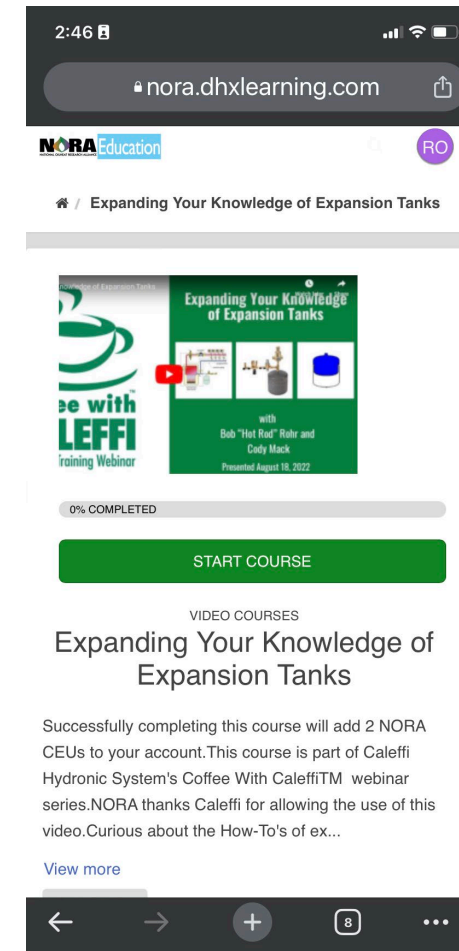
# Curriculum Updates

- E-book
- Audiobook
- Power points
- Quizzes
- 2300+ sales 13 months
- Biofuels update



# CEU's

- All renewals and upgrades are done via CEU's not testing
- Adding new video classes continually
- Most recently 5 from Caleffi



# Bioheat Prerequisite

[NORA's Main Site](#)[About NORA Certification](#)[Technicians Manual](#)[Technical Resources](#)

Required Course

## IMPORTANT

*Effective December 9, 2022, all recertifications and certification upgrades require the course*

### **Bioheat® Technical Guidance (NORA-109-1)**

#### BRONZE CERTIFICATION

To upgrade to Silver Certification, twenty NORA approved credits (CEUs) are required along with three years in-field experience. Two of the twenty CEUs must come from the "Bioheat® Technical Guidance" course.

#### SILVER CERTIFICATION

To renew silver certification, twenty-four NORA approved credits (CEUs) are required. Two of the twenty-four CEUs must come from the "Bioheat® Technical Guidance" course.

#### GOLD CERTIFICATION

To upgrade to Gold certification, Silver certification is required along with five years experience and completing four of the NORA Gold Advanced courses. In addition to these, the "Bioheat® Technical Guidance" course is required.

To renew to Gold certification, twenty-four NORA approved credits (CEUs) are required. Two of the twenty-four CEUs must come from the "Bioheat® Technical Guidance" course.

Look for this course in "Online Courses"

#### Why Bioheat®?

- Renewable
- Made in the USA
- Low carbon
- It's the best option for Oilheat to meet carbon dioxide reduction goals



#### VIDEO COURSES

Bioheat® Technical Guidance  
(NORA-109-1)

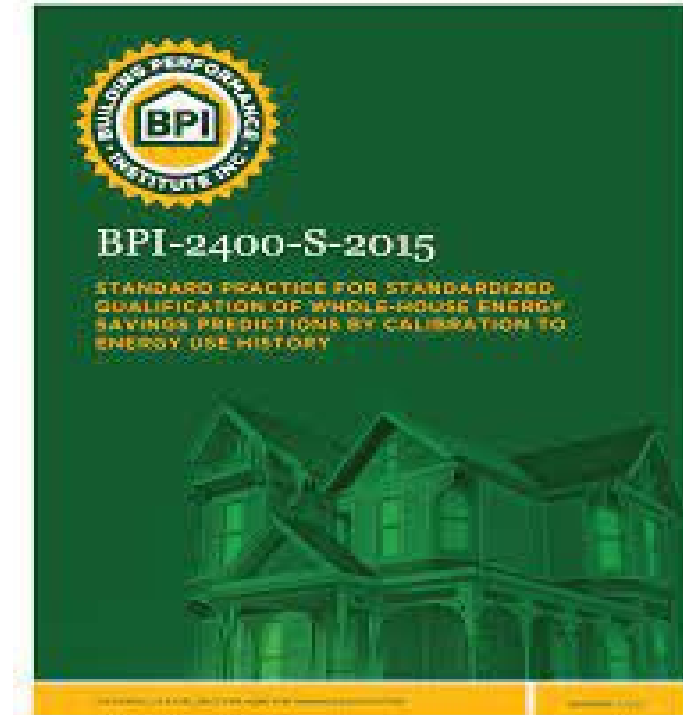
# IRA 2022 - Hope For Homes

- Homeowner Managed Energy Savings
- \$2K greater than 20% but less than 35%
- \$4K greater than 35%
- Doubled for low income
- State administered rebate
- Modeling based on BPI 2400 standard, no fuel exclusions



# BPI 2400

- Protocol to predict energy savings for various upgrades
- Sec of DOE can authorize alternate methods to quantify potential savings
- QA required
- HPwES requires both BPI building analyst & heating specialist certification



# NORA Silver = BPI Heating Specialist



- Working to incorporate BPI BA training & testing
- Anyone can challenge test-Training?
- Both written and field test are mandatory





# NORA/BPI

- Part of the solution vs. ?
- State /Federal programs
- Diversification opportunity
- BPI Standards Technical Committee – JL & RO
- Heating oil to liquid fuel- reduce CO limit 400PPM-100PPM



# High Efficiency Electric Homes Rebate Act

- Funds disbursed as rebates through states- \$4.3B
- Hybrid systems not precluded federally, by states?
- 8/24 Deadline
- Air to air, air to water both ducted and ductless
- 25C credits available now-30% up to \$2K annually

## HEEHRA Rebate Levels For Qualified Electrification Projects

### Income Eligibility and % Costs Covered

|  |             |
|--|-------------|
| <b>Low-income:</b> <80% Area Median Income (AMI)<br>% costs covered (including installation) | <b>100%</b> |
| <b>Moderate-income:</b> 80-150% AMI<br>% costs covered (including installation)              | <b>50%</b>  |

### Overall Incentives

|                       |                 |
|-----------------------|-----------------|
| Max consumer rebate   | <b>\$14,000</b> |
| Max contractor rebate | <b>\$500</b>    |

### Rebates for Qualified Electrification Projects

|  |                |
|--|----------------|
| Heat pump HVAC   | <b>\$8,000</b> |
| Heat pump water heater                                 | <b>\$1,750</b> |
| Electric stove/cooktop                                 | <b>\$840</b>   |
| Heat pump clothes dryer                                | <b>\$840</b>   |
| Breaker box  | <b>\$4,000</b> |
| Electric wiring  | <b>\$2,500</b> |
| Weatherization<br>insulation, air sealing, ventilation | <b>\$1,600</b> |

# EPA 608 Testing

- NORA is now approved to administer EPA 608 exams both in person and online
- Needed to purchase and handle refrigerants
- Hybrid systems

## EPA Section 608 Preparatory Manual

9th Edition V2



# HVAC Excellence

- HVAC community woefully uninformed about liquid fuels
- Proposal submitted & accepted for March 2023
- Conference for HVAC instructors
- 32 Instructors present
- New school?- MN
- <https://www.youtube.com/live/D E9Wz Zsvr8?feature=share>

[Viewing > Home > HVAC Excellence > Conference > Sessions > Session Details](#)

## Introducing Technicians to Renewable Liquid Fuels

*Presented by:* [Robert OBrien](#)

The transition from petroleum-based heating oil to renewable liquid fuels is well under way with many states already having mandates as well as a self-imposed industry goal of being net zero carbon by 2050 with benchmarks along the way.

The two fuels are very similar but there are some differences that can effect service procedures. As this conversion happens, Technicians servicing the 5 million plus sites using liquid fuels need to be up to speed on what to expect. This session is geared towards those already providing training for the oil heat market as well as those interested in entering the space with the move towards renewable fuels.

The program will cover the similarities and differences between fossil and renewable fuels in all aspects, handling and storage, material compatibility, combustion, flame sensing and how to service and maintain burners using these fuels properly and with confidence.

# Building Performance Association



- RFP was declined for 2023 National Show
- Resubmit for 2024
- Work with local events

# IECC



- 2021- Connecticut & New Jersey
- 2018 – Delaware, Maryland, New York and Pennsylvania
- 2015- Massachusetts, Maine, New Hampshire, Rhode Island and Vermont



## • Commercial

- Successfully kept combustion of liquid fuels in the code
- Blocked heat pump infrastructure
- NORA submitted a proposal to include renewable liquid fuels as eligible to offset on site renewable energy requirements
- Passed subcommittee 9-2
- Failed in main committee 17-10

## • Residential

- NORA submitted a proposal to include Energy Star B20 rated Boilers & Furnaces as more efficient HVAC options to meet code requirements
- Passed subcommittee 5-2
- Failed main committee 19-10
- Proposed & passed new definitions



- **2024 International Energy Conservation Code [CE Project]**
- **Add new definition as follows:**
- **BIODIESEL BLEND.** A homogeneous mixture of hydrocarbon oils and mono alkyl esters of long chain fatty acids.
- **FUEL GAS.** A natural gas, manufactured gas, liquified petroleum gas or a mixture of these.
- **FUEL OIL.** Kerosene or any hydrocarbon oil having a flash point not less than 100°F (38°C).
- **LIQUID FUEL.** A *fuel oil* or biodiesel blend.
- **Fuel oil replaced by liquid fuels throughout code**



# Accredited Instructor Program

- Instructors are technically oriented but....
- Improve classroom & teaching skills
- CEU's?
- First session 6/6-6/9 2023



# Technical Resource Center

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

