

NORA Board Meeting  
Hyatt Regency Newport,  
1 Goat Island, Newport, RI  
12.30 -2.30 Eastern Time

Minutes

I. Introduction – Chairwoman Allison Heaney and President John Huber

John Huber	Peter Aziz
John McCusker	David Neil
Al Breda	Dan Donovan
Eric DeGesero	Bob Long
Ed Scott	Natalie Mondsini
Greg Anderson	Allison Heaney
Roger Marran	George McQueeney
John Miles	Stephen Sack
Ted Noonan	Quincy Longacre
Steve Clark	Steve McCracken
Susan Hammond	Kate Childs
John Combs	Tom Devino
Larry Galgoci	Tom Santa
Charlie Uglietto	Ed Noonan
Ken Russ	Jay Buehler
Daniel Singer	Matt Meehan
Bruce Harris	

II. Approval of Minutes – The minutes of the previous meeting were moved for approval, seconded and duly approved.

III. Financial Information – Eric DeGesero as Treasurer presented the report.

In reviewing the 2015 audit, Mr. DeGesero noted that 2015 was the first full year NORA was operative post 2014 reauthorization as evidenced by the \$5 million increase in cash at year end 2015 when compared to the same time 2014. If you look under the current liabilities - state grants payable and unallocated state rebates - you will see that most of these funds will move to the states.

*Unrestricted undesignated net assets* – this \$775,000 is the surplus from 2015 that at our last meeting we agreed to carry into 2016 to make up for the disastrous first quarter and keep the states whole. The subsequent adjustment will be taken in 2017 as we will discuss later.

*Designated net assets* –

*Pre-2014* This \$472,266 is pre-2014 funds that were used for our internet campaign conducted earlier this year and we reviewed at our May 2016 Board meeting. Essentially all of these funds are spent, a small have not been spent and will be carried forward. *State Grants and Rebates made after year end* – This is carryforward from 2014 that was moved into 2015 state grants.

*National spending not Yet Occurred* These funds will be spent on Research and Development projects by NORA. The funds in these accounts have accrued since 2014. Developing worthy projects is a much slower process than education or consumer education. NORA is now in the process of reviewing several major projects in the research and development report which will cut into this account. Additionally, the lab in Plainview New York is running and NORA is looking to hire a lab assistant. Some of the projects that have been funded include research on biofuels, development of a B-100 burner that modulates, a novel burner that works like gas, and new work on an efficient tankless coil.

I would now like you to turn to the *Statements of Activities (page 5 of 16)*

The program expenses include activities by the states and are allocated by NORA central to the states to ensure that the overall NORA program stays within the guidelines established by reauthorization.

### **2015 Audit Letter**

Included in your packet you will find a July 28, 2016 letter addressed to the Board outlining items the auditor deemed to be significant deficiencies. The term significant deficiencies sounds much worse than it is.

I will address each of the four as they are in the letter:

- After John Huber sent the 2015 financials to the auditor and the time the auditor responded, additional refunds and payments were received. The net of these were a net negative of 33,000 from refunds that occur after we close the year. Refunds arrive fairly randomly, and thus are hard to accrue. Essentially, we pay \$100,000 in refunds per month. So, the first few months of each year as one would expect are last year's refunds. NORA will provide additional information to the auditor in advance of next year's audit, but inserting an accrual will probably lead to more confusion than clarity.
- John Huber allocates his time to each project area he is working on. He wasn't allocating his vacation time to each project. This will ensure this occurs, and at the end of the year any remaining vacation time will be allocated proportionately to the yearly activities.
- In 2011 NORA borrowed money from Virginia for an R&D project to develop the Babington Burner's interface with a furnace. We committed to repayment if NORA was reauthorized. So, in the transfer from NORA's R and D account to Virginia's there was

some confusion, and this note reflects the necessary coordination between the auditor and internal accounting.

- The fourth bullet reflects the interplay on the state accounts between the transfers in state accounts between rebates and designated activities. Occasionally, the timing of these reconciliations leads to the state accounts being out of synch with the monthly financials. Accounting will ensure that all accounts are balanced regularly.

It is important to note in the auditor's August 15, 2016 Letter in Exhibit A at Items B and C the auditor states there was neither difficulty nor disagreement with management regarding the performance of the audit.

Are there any questions. If none, I would welcome someone to move this report and audit.

On motion duly made and seconded, the audit was accepted by the Board.

## **2016**

In May we revised downward what we expected to receive as a result of the poor weather performance of Q1 2016. With regard to the revenue, we have only Quarter 2 in hand since the bad 1<sup>st</sup> Quarter. This quarter is slightly below expectations, but it provides little real information as refunds impact this quarter, and it is only about 16 percent of the yearly revenue. Unfortunately, Quarter 4 will be the next time that we really get a sense of the revenue, and obviously that will be weather driven.

All expense line items are trending within budget.

It appears that accounting expense is significantly under budget. However, the account expense is allocated to the various items that we have the accountants perform, just as John Huber's time is and you will see the annual report was nearly double what we had budgeted so these fees are actually trending within our overall estimate. We should note that a variety of states are now managing rebate programs for equipment and thus the transactional flow is exceeding expectations.

The Statement of Financial Position shows a loss of \$3.5m. However, this is not a true reflection of the state of our financial position. On January 1<sup>st</sup> of each year we book all state rebates as if they were due in full then. States receive their funds on a quarterly basis after NORA receives its funding. This "loss" is lessened throughout the year as the states receive their funding.

The \$775,000 reported earlier is still reflected as a current asset but will be moved over when the accountants do the 2016 audit. You should note that this is slightly less than the adjustment we made to budget, which included the underbudget collection costs. This year's accounting costs should bring those into alignment.

## 2017

Per the budget submitted to DOE and approved by this budget, we commit to adjusting state accounts to reflect true revenue from the states. This is done by the accounting department assessing July 1, 2015 revenue and refunds through July 1, 2016 revenue and refunds. These percentages are then applied to the state grant categories for the following year. The attached table reflects those changes. This has been how NORA handles this since year 1. Most of the state changes are modest, however a few states have more significant changes. We can speculate that the changes in pricing and the significant weather alterations this year are the issue. 2017 will also be amended by the 2016 revenue to ensure that all percentages required by law are met.

We have attached the state reports for information purposes. We are concerned that some state spending is lagging, but it is our understanding that the four Midwest states are now launching programs to deliver value. We will work with the other states, to ensure services are being delivered.

Finally, NORA has done two biennial budgets and 2017 will require a new budget cycle for 2018 and 2019. Charlie Uglietto per the by-laws will chair that committee, and we will need volunteers to participate in that process next spring.

On motion duly made and seconded, the Treasurer's report was approved.

#### IV. Petition for Recognition of NYSEC as New York State Qualified State Organization

NORA received a petition from the New York State Energy Coalition (NYSEC) that requested that we recognize NYSEC as the qualified state organization instead of the Empire State Energy Association (ESEA). The Board spent a substantial amount of time on this issue and several members of the Board recommended that the individuals in New York should resolve this issue. John Huber indicated that under the law that the Board has to make a decision, however, he would the dealers in New York to obtain a resolution.

The following motion was offered.

That the decision would be held over until the next meeting of the Board, which will probably be in May of 2017.

That the Chairman convene a Committee to gather information and to evaluate the competing claims in the letter from NYSEC and email from ESEA.

That the budgetary allocations provided to the Board at this meeting for the regional associations in New York be approved as presented. However, the allocation for ESEA should be set aside and should not be allocated until a determination is made.

This motion was seconded and approved by the Board.

V. Research and Development – Director of Laboratory Dr. Thomas Butcher

a. Project Opportunity Notice Results and Report from Research Committee

The research committee August 8, 2016 to review six proposals and is making the following four recommendations to the Board.

Primary Contact:	Roger Marran		
	Proposal	Research Committee Recommendation	Research Committee Adjustment
NORA Cost:	\$345,818	\$310,818	Approve project as amended by removing NORA cost-share (\$35,000) for marketing task.
Cost Share:	\$461,342	\$496,342	
Total Cost:	\$807,160	\$807,160	
Brief Project Description			
Energy Kinetics intends to leverage the technology of its existing high efficiency boilers to produce a low cost boiler capable of providing “instant” hot water for new construction and to replace existing tankless coil boilers with improved efficiency and lower idle loss. Significant decreases in idle loss will be achieved through better insulation and through operating the boiler at significantly lower idle temperatures than employed by existing tankless coil designs.			
Proposal Title:	Oil-Fired Condensing Heat Exchanger/Boiler	Duration (months)	
Primary Contact:	Dave Searce		
	Proposal	Research Committee Recommendation	Research Committee Adjustment
NORA Cost:	\$350,000	\$400,000	Empower Research Committee to approve project after final review of updated project (see below)
Cost Share:	\$87,738	\$87,738	
Total Cost:	\$437,738	\$437,738	
Brief Project Description			

PB Heat, LLC intends to demonstrate a compact, condensing heat exchanger/boiler prototype aimed at helping oil customers realize energy efficiency and fuel savings similar to modulating, condensing gas-fired boilers at a competitive cost. The heat exchanger is compact, cleanable, scalable and multi-fuel compatible.

NORA staff has determined HX technology is novel and likely viable. Recommends adding Task 0 – proof of concept for burner combustion in small diameter and short length chamber. Recommend to Board that it empowers the Research Committee to commit funds to the project if upon final detailed review with staff is positive.

<b>Proposal Title:</b>	B50 Compatible Boiler with Automatic Modulating Control	<b>Duration (months)</b>	
<b>Primary Contact:</b>	Andy Babington		
	<b>Proposal</b>	<b>Research Committee Recommendation</b>	<b>Research Committee Adjustment</b>
<b>NORA Cost:</b>	\$338,987	\$425,687	Approve project as amended by adding PB Heat and Slant Fin to EK test boiler mapping at reasonable additional cost.
<b>Cost Share:</b>	\$338,987	\$338,987	
<b>Total Cost:</b>	\$677,974	\$764,674	

#### Brief Project Description

Design, fabricate, test and deliver three self-modulating B50 Compatible Plug and Play Burner prototypes matched with EK, PB Heat and Slant Fin boilers for NORA to test and evaluate. Our design concept and approach is to integrate the existing B100 FlexFire prototype, currently being developed under PON 2014.

<b>Proposal Title:</b>	High Efficiency Tankless Coil/Oilheat	<b>Duration (months)</b>	
<b>Primary Contact:</b>	Michael Garrabrant		
	<b>Proposal</b>	<b>Research Committee Recommendation</b>	<b>Research Committee Adjustment</b>
<b>NORA Cost:</b>	\$255,307	\$280,847	Empower Research Committee to approve project after final review of updated project (see below)
<b>Cost Share:</b>	\$63,840	\$70,662	
<b>Total Cost:</b>	\$319,147	\$351,509	

#### Brief Project Description

Stone Mountain Technologies, Inc. (SMTI), with the support of The Department of Energy, Gas Technology Institute (GTI), and the Oak Ridge National Laboratory, is developing a natural gas-fired absorption heat pump designed to provide space and water heating COPs greater than 1.0 at low temperatures. This technology is designed to compete against cold climate electric heat pumps, condensing furnaces-boilers, and water heaters. Unlike the Robur technology, the SMTI technology can accommodate several retention head combustion designs and can be manufactured for substantially less cost. This proposal will develop an oil-fired prototype based on the Babington Modulating Oil burner technology, performance tested at SMTI using #2 heating oil and then delivered to the NORA laboratory for additional fuels testing.

Research Committee was interested in this product because of high cold climate heating efficiency >140% delivering 150F hot water to compete with electric and natural gas cold climate heat pumps in the future. They also wanted to consider a heating and cooling version recognizing the lower cooling efficiency. The modified proposal includes a parametric design study on the best option for adding cooling while delivering the heating only prototype for proof of concept for testing.

Proposal Title:	Energy Auditing with Inexpensive Wireless Tank Gauges		Duration (months)
Primary Contact:	Michael Garrabrant		
	Proposal	Research Committee Recommendation	Research Committee Adjustment
NORA Cost:	\$119,000	\$0	Did not see market value especially not tied to back office systems
Cost Share:	\$30,000		
Total Cost:	\$149,000		
Brief Project Description			

POEM Technology, LLC proposes to take advantage of a unique opportunity to provide efficiency in delivery as well as a unique energy auditing infrastructure applicable to residential and commercial heating oil systems. The recent availability of very inexpensive and versatile radio modules will bring the Internet of Things (IoT) infrastructure to the world of retail oil suppliers. POEM Technology already manufactures a line of inexpensive wireless tank gauges, but we propose to develop an even more economical line of gauges at a price that will allow oil suppliers to provide them as corporate giveaways. To this end, we will develop new versions of our cellular and WiFi radio devices to take advantage of recent dramatic price reductions in the radio modules. Even as the IoT infrastructure becomes more complex, the world of tank monitoring does not change. This allows us to use radio technology at the low end of the price range yet still provide outstanding advantages. Additionally, the further incorporation of external temperature sensing will enable either free or very low cost energy auditing.

## Resolution

### Research and Development Projects

The National Oilheat Research Alliance promulgated a project opportunity notice this spring. NORA solicited proposals from manufacturers, researchers and others in the oilheating industry to advance the agenda of the NORA Act. In particular the focus is on improving efficiency.

NORA received six proposals in that effort, five of which were complete. NORA's technical team of Dr. Butcher and Richard Sweetser reviewed the proposals and gathered additional information which was the subject of a meeting of the Research Committee of NORA which was established by Chairperson Heaney. After discussion, the Committee indicated which projects were worthy of support and requested NORA staff to do further outreach to the proposals that were positively reviewed. The Research report delivered by Dr. Butcher summarizes those discussions and the Committee's review.

Developing new technologies is critical to the future success of the industry and to providing full value to oilheating consumers.

Now be it Resolved: That the NORA President is authorized to enter into contracts with those company's proposals in accordance with the funding described in this report.

Dr. Tom Butcher then provided an update on the activities currently underway with previous grant recipients as well as the projects underway at NORA's lab in New York.

He also invited everyone to attend the Technology Conference on September 14



## VI. Education and Training Activities

John Levey updated everyone on the progress on developing the Gold training program and the certification program.

## VII. Energy Efficiency

Roger Marran announced that the Fuel Savings Analysis Calculator was released and would be available. He indicated that the release was based on the research at Brookhaven and the Conservation Services Group.

## VIII. Executive Committee and Officers

Immediate Past Chairperson	– Allison Heaney
Chairman	- Tom Santa
First Vice-Chairman	- Charlie Uglietto
Second Vice-Chairman	-
Treasurer	- Eric DeGesero
President	- John Huber

### Executive Committee

John McCusker	Global	Charles Uglietto	Cubby Oil
Ted Noonan	Noonan Energy	Michael Estes	Estes Oil Burner Service
Tom Santa	Santa Energy	Dan Donovan	Petroleum Heat and
Steve Clark	Genessee Fuel	Power	
Jeff Lykins	Lykins Oil Company	Eric DeGesero	Fuel Merchants
Peter Aziz	Bantam Fuels	Association of New Jersey	
Allison Heaney	Energy Conservation	Roger Marran	Energy Kinetics
Group		Steve McCracken	Amerigreen
Jeff Jenkins	Jenkins Fuel Oil	Kate Childs	Tuxis-Ohrs Fuel
Company			

## IX. Old Business

There was no old business.

## X. New Business

There was no new business.

## XI. Adjournment

On motion duly made and seconded, the meeting was adjourned.

National Oilheat Research Alliance  
Statement of Activities  
For the Twelve Months Ending December 31, 2016

	December 2016	YTD 2016	2016 Budget	Remaining	YTD 2015
<b>INCOME</b>					
<b>Collections and Assessments</b>					
Collections	\$2,933,424.35	\$9,886,895.54	\$8,404,086.98	(\$1,482,808.56)	\$10,913,466.57
Remittance Accrual	0.00	0.00	0.00	0.00	16.04
Refunds	(427,159.91)	(1,282,170.15)	0.00	1,282,170.15	(1,185,050.66)
Collection Costs	(12,237.36)	(118,876.34)	(170,000.00)	(51,123.66)	(180,384.92)
<b>Net Collections</b>	<b>2,494,027.08</b>	<b>8,485,849.05</b>	<b>8,234,086.98</b>	<b>(251,762.07)</b>	<b>9,548,047.03</b>
		8,604,725.39	200,638.41		
<b>In Kind Contributions</b>					
Sales Revenue	3,172.29	41,397.49	100,000.00	58,602.51	88,657.95
Other Revenue (Grants, etc)	0.00	47,399.50	200,000.00	152,600.50	0.00
<b>Total Income</b>	<b>2,497,199.37</b>	<b>8,574,646.04</b>	<b>8,534,086.98</b>	<b>(40,559.06)</b>	<b>9,636,704.98</b>
<b>PROGRAM EXPENSES</b>					
<b>Consumer Education and Training (Max. 30%)</b>					
Education and Training (Central)	10,217.51	311,325.31	375,000.00	63,674.69	418,125.32
Education and Training (States)	(129.95)	2,461,644.23	2,461,644.23	0.00	2,433,444.13
<b>Research Development and Demonstration (Min. 30%)</b>	<b>(1,452,765.74)</b>	<b>1,478,197.41</b>	<b>2,786,646.09</b>	<b>1,308,448.68</b>	<b>1,392,616.08</b>
Research Development and Demonstration (Central)	(1,453,515.74)	891,551.32	2,200,000.00	1,308,448.68	601,117.13
Research Development and Demonstration (States)	750.00	586,646.09	586,646.09	0.00	791,498.95
<b>Home Energy Efficiency Program (Min. 15%)</b>					
Home Energy Efficiency Program (Central)	(4,510.05)	79,915.97	100,000.00	20,084.03	98,768.41
Home Energy Efficiency Program (States)	0.00	1,293,322.61	1,293,322.61	0.00	1,266,720.87
<b>Total Central</b>	<b>(1,447,808.28)</b>	<b>1,282,792.60</b>	<b>2,675,000.00</b>	<b>1,392,207.40</b>	<b>1,118,010.86</b>
<b>Total States</b>	<b>620.05</b>	<b>4,341,612.93</b>	<b>4,341,612.93</b>	<b>0.00</b>	<b>4,491,663.95</b>
<b>State Rebates</b>	<b>45,314.14</b>	<b>2,042,506.36</b>	<b>2,042,506.36</b>	<b>0.00</b>	<b>1,736,927.94</b>
<b>Old Grant Advertising</b>	<b>(598,666.68)</b>	<b>416,333.32</b>	<b>0.00</b>	<b>(416,333.32)</b>	<b>0.00</b>

**Office Unallocated Expenses**

Salaries and Consulting (Admin)	42,001.77	126,599.83	75,000.00	(51,599.83)	57,987.85
Accounting (Admin)	2,468.43	37,946.46	100,000.00	62,053.54	95,652.78
Insurance (Admin)	404.77	11,656.12	15,000.00	3,343.88	9,406.32
Taxes	157.81	2,136.56	7,000.00	4,863.44	1,854.36
Postage	1.18	2,385.69	1,000.00	(1,385.69)	5,301.84
Web Pages	(11,833.25)	9,690.03	0.00	(9,690.03)	9,277.35
Annual Report	4,716.55	40,198.96	15,000.00	(25,198.96)	34,368.83
Rent and Telephone	469.34	19,412.25	20,000.00	587.75	24,890.51
Travel	0.00	288.55	12,000.00	11,711.45	5,180.72
Meeting Expenses	218.16	7,121.71	15,000.00	7,878.29	2,843.16
Office Supplies	49.76	1,485.35	0.00	(1,485.35)	2,326.08
Dues & Memberships	0.00	64.99	0.00	(64.99)	184.00
Bank Fees	486.09	5,497.17	0.00	(5,497.17)	6,089.34
Legal Expense	0.00	0.00	30,000.00	30,000.00	8,000.00
Professional Fees	0.00	2,831.20	0.00	(2,831.20)	0.00
Misc Expense	0.00	170.05	15,000.00	14,829.95	183.54
Advertising Expense	0.00	0.00	0.00	0.00	380.00
Fixed Assets <\$1,000	0.00	789.59	0.00	(789.59)	0.00
Equipment Maintenance	611.25	4,138.65	0.00	(4,138.65)	5,593.75
Bad Debts	0.00	0.00	0.00	0.00	14,965.89
<b>Total Unallocated Expenses</b>	<b>39,751.86</b>	<b>272,413.16</b>	<b>305,000.00</b>	<b>32,586.84</b>	<b>284,486.32</b>

**Other Expenses/(Income)**

Cost of Goods Sold	323.67	43,518.74	80,000.00	36,481.26	70,546.85
Interest Expense	0.00	170.02	0.00	(170.02)	0.00
Interest	(165.31)	(1,730.06)	0.00	1,730.06	(1,136.26)
<b>Total Other Expenses/(Income)</b>	<b>158.36</b>	<b>41,958.70</b>	<b>80,000.00</b>	<b>38,041.30</b>	<b>69,410.59</b>

**Net Revenue/(Expense)**

<b>4,457,829.92</b>	<b>177,028.97</b>	<b>(910,032.31)</b>	<b>(1,087,061.28)</b>	<b>1,936,205.32</b>
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See Accountants' Compilation Report

National Oilheat Research Alliance  
Statement of Financial Position  
December 31, 2016

	2016	2015
ASSETS		
CURRENT ASSETS:		
Cash and Cash Equivalents	\$9,448,186.45	\$8,209,832.26
Accounts Receivable	5,372.20	56,050.32
Assessments and Other Receivables	2,818,268.79	2,519,503.17
Security Deposit	21,146.10	21,146.10
Prepaid Assets	15,946.11	342,228.67
Total Current Assets	12,308,919.65	11,148,760.52
PROPERTY AND EQUIPMENT		
Office Furniture and Equipment	73,847.15	11,821.29
Website	45,450.00	45,450.00
Computer Equipment	10,723.64	7,944.39
Less: Accumulated Depreciation	(31,519.36)	(16,580.77)
Less: Accumulative Amortization (Web Site)	(20,379.99)	(11,290.00)
Total Property and Equipment	78,121.44	37,344.91
TOTAL ASSETS		
	\$12,387,041.09	\$11,186,105.43
LIABILITIES AND NET ASSETS		
CURRENT LIABILITIES:		
State Rebate Obligations (Pre 2014)	0.00	465,397.37
State Rebate Obligations 2014	257,941.31	1,120,438.02
State Rebate Obligations 2015	2,186,582.88	4,834,917.98
State Rebate Obligations 2016	4,588,194.42	(607.72)
State Rebate Obligations 2017	(67,788.56)	0.00

Total Grants Payable	6,964,930.05	6,420,145.65
Accrued Salaries & Benefits	23,819.80	36,740.47
Reserve for BIO Diesel Testing	764.35	764.35
Refunds Reserve	95,600.00	0.00
Accounts Payable	937,095.76	622,935.81
Contracts Payable	67,730.00	0.00
Accrued Expenses	14,553.01	0.00
	-----	-----
Total Current Liabilities	\$8,104,492.97	\$7,080,586.28
NET ASSETS:		
Unrestricted Net Assets	233,173.27	(1,161,204.80)
Prior Year Re-Authorization Assets	55,933.05	472,266.37
Designated Net Assets	3,816,412.83	2,858,252.26
Net Income (Loss)	177,028.97	1,936,205.32
	-----	-----
Total Net Assets	4,282,548.12	4,105,519.15
	-----	-----
TOTAL LIABILITIES AND NET ASSETS	\$12,387,041.09	\$11,186,105.43
	=====	=====

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Forward Money	410,202.24
	200,639
	209,563.24
R and D Not Obligated	1,903,954.00
R and D Obligated	1,778,415.00
Efficiency Not obligated	93,635.00
Consumer Ed Not Obligated	40,409.00
	3,816,413.00

**NATIONAL OILHEAT RESEARCH ALLIANCE, INC.**

**DECEMBER 31, 2016 AND 2015**

DRAFT

**These financial statements  
may be reproduced only  
in their entirety.**

NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

DECEMBER 31, 2016 and 2015

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## **INDEPENDENT AUDITOR'S REPORT**

The Board of Directors  
National Oilheat Research Alliance, Inc.  
Alexandria, Virginia

### **Scope**

We have audited the accompanying statements of the National Oilheat Research Alliance, Inc. (the Alliance), which comprise the statements of financial position as of December 31, 2016 and 2015, and the related statements of activities and cash flows for the years then ended, and the related notes to the financial statements.

### **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes 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.

### **Auditor's Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.



The Board of Directors  
National Oilheat Research Alliance, Inc.  
Alexandria, Virginia

## **Opinion**

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, 2016 and 2015, 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.

## **Report on Supplementary Information**

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The Schedules of Expenses by State/Jurisdiction on pages 13-16 for the year ended December 31, 2016, 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.

the report date

CERTIFIED PUBLIC ACCOUNTANTS

NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

STATEMENTS OF FINANCIAL POSITION  
DECEMBER 31, 2016 AND 2015

ASSETS		2016	2015
CURRENT ASSETS			
Cash	\$	9,448,186	\$ 8,209,832
Assessments receivable		2,818,269	2,519,503
Other current assets		<u>21,318</u>	<u>398,279</u>
Total current assets		12,287,773	11,127,614
PROPERTY AND EQUIPMENT, NET		78,122	37,344
OTHER NONCURRENT ASSETS		<u>21,146</u>	<u>21,146</u>
TOTAL ASSETS	\$	<u><u>12,387,041</u></u>	<u><u>11,186,104</u></u>
LIABILITIES AND NET ASSETS			
CURRENT LIABILITIES			
Accounts payable	\$	712,334	\$ 298,113
Refunds payable		392,990	324,823
State grants payable		4,034,053	3,504,165
Obligation for unallocated state rebates		2,930,877	2,314,389
State grant rebates remaining under NORA Public Law 106-469		-	601,592
Other current liabilities		<u>24,584</u>	<u>37,505</u>
Total current liabilities		8,094,838	7,080,587
OTHER NONCURRENT LIABILITIES		<u>9,657</u>	<u>-</u>
TOTAL LIABILITIES		<u>8,104,495</u>	<u>7,080,587</u>
NET ASSETS			
Unrestricted undesignated net assets		410,200	774,998
Designated net assets-			
Pre-2014 reauthorization net assets		55,933	472,266
State grants and rebates made after year end		-	404,660
National spending not yet incurred-			
Research, development, and demonstration - not yet obligated		1,903,954	1,851,379
Research, development, and demonstration - obligated under contract		1,778,415	517,195
Heating oil efficiency and upgrade - not yet obligated		93,635	73,551
Heating oil efficiency and upgrade - obligated under contract		-	-
Consumer education, safety, and training - net yet obligated		40,409	11,468
Consumer education, safety, and training - obligated under contract		<u>-</u>	<u>-</u>
Total unrestricted net assets		<u>4,282,546</u>	<u>4,105,517</u>
TOTAL LIABILITIES AND NET ASSETS	\$	<u><u>12,387,041</u></u>	<u><u>11,186,104</u></u>

The accompanying notes are an integral part of these financial statements.

NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

STATEMENTS OF ACTIVITIES  
FOR THE YEARS ENDED DECEMBER 31, 2016 AND 2015

	<u>2016</u>	<u>2015</u>
CHANGE IN UNRESTRICTED NET ASSETS		
REVENUE AND GAINS/LOSSES		
Assessments revenue - net of refunds	\$ 8,604,725	\$ 9,728,432
Other income, net of cost of sales of \$43,519 in 2016 and \$70,547 in 2015	<u>47,008</u>	<u>19,247</u>
Total revenue and gains/losses	<u>8,651,733</u>	<u>9,747,679</u>
EXPENSES		
Program expenses:		
Research, development, and demonstration	1,477,747	1,382,176
Heating oil efficiency and upgrade	1,373,239	1,366,329
Consumer education, safety, and training	2,757,703	2,847,074
Unallocated state rebates	<u>2,042,506</u>	<u>1,736,928</u>
Total program expenses	<u>7,651,195</u>	<u>7,332,507</u>
Administrative costs	<u>248,101</u>	<u>249,248</u>
General and special projects:		
Assessment and collection costs	118,876	180,385
Annual report costs	40,199	34,369
Expenditures of pre-2014 reauthorization funds	<u>416,333</u>	<u>14,966</u>
Total general and special projects	<u>575,408</u>	<u>229,720</u>
Total expenses	<u>8,474,704</u>	<u>7,811,475</u>
CHANGE IN UNRESTRICTED NET ASSETS	177,029	1,936,204
NET ASSETS, BEGINNING OF YEAR	<u>4,105,517</u>	<u>2,169,313</u>
NET ASSETS, END OF YEAR	<u><u>\$ 4,282,546</u></u>	<u><u>\$ 4,105,517</u></u>

NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

STATEMENTS OF CASH FLOWS  
FOR THE YEARS ENDED DECEMBER 31, 2016 AND 2015

	<u>2016</u>	<u>2015</u>
CASH FLOWS FROM OPERATING ACTIVITIES		
Change in net assets	\$ 177,029	\$ 1,936,204
Adjustments to reconcile change in unrestricted net assets to net change in cash from operating activities:		
Depreciation and amortization	24,029	9,277
Changes in assets and liabilities:		
Assessments receivable	( 298,766)	349,660
Other current assets	376,961	( 292,513)
Other noncurrent assets	-	( 21,146)
Accounts payable	414,221	104,222
Refunds payable	68,167	( 40,674)
State grants payable	529,888	1,651,989
Obligation for unallocated state rebates	616,488	1,408,008
State grant rebates remaining under NORA Public Law 106-469	( 601,592)	( 172,810)
Other current liabilities	( 12,921)	4,749
Other noncurrent liabilities	<u>9,657</u>	<u>-</u>
Net change in cash from operating activities	1,303,161	4,936,966
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchase of property and equipment	<u>( 64,807)</u>	<u>( 13,321)</u>
NET CHANGE IN CASH	1,238,354	4,923,645
CASH, BEGINNING OF YEAR	<u>8,209,832</u>	<u>3,286,187</u>
CASH, END OF YEAR	<u><u>\$ 9,448,186</u></u>	<u><u>\$ 8,209,832</u></u>

# NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

## NOTES TO FINANCIAL STATEMENTS

### NOTE 1 - THE ORGANIZATION

The 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 NORA 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 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 NORA Public Law 106-469 ceased on February 6, 2010. On February 7, 2014, the NORA Public Law 113-79 extended the provisions of NORA Public Law 106-469 to February 6, 2019. Funding under NORA Public Law 113-79 resumed effective April 1, 2014.

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. In the years ended December 31, 2016 and 2015, the Alliance was in compliance with these percentages.

### 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 generally accepted accounting principles in the United States of America (GAAP). The Alliance reports information regarding its financial position and activities according to three classes of net assets: unrestricted, temporarily restricted, and permanently restricted.

#### 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.

#### Property and Equipment

Property and equipment purchased in excess of \$1,000 are recorded at cost. Depreciation and amortization of furniture, equipment, website development costs, and computers is computed by using the straight-line method over the estimated useful lives of the assets. Estimated useful lives by category are three to five years for furniture, equipment, and computers and five years for website development costs.

#### Assessments Receivable

An estimate of assessments to be received, but not remitted to the Alliance as of year end, is recognized. Receivables are charged to bad debt expense as they are deemed uncollectible based upon a periodic review of the accounts. As of December 31, 2016 and 2015, no allowance for uncollectible accounts was considered necessary by management.

# NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

## NOTES TO FINANCIAL STATEMENTS

### NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

#### Assessments Revenue

The NORA Public Law 113-79 requires 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.

Under NORA Public Law 113-79's collections rules, any dyed distillate or blends are subject to assessment. Some of this fuel is used for non-heating applications and is refunded. Assessments revenue is presented in the accompanying statements of activities net of refunds recorded of \$1,282,170 and \$1,185,051 for the years ended December 31, 2016 and 2015, respectively.

#### 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, 2016 and 2015.

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 the report date, which is the date the financial statements were available to be issued.

#### Reclassifications

Certain 2015 amounts have been reclassified to conform with 2016 classifications.

### NOTE 3 - CONCENTRATIONS OF CREDIT RISK

The Alliance has exposure to credit risk on its cash and investments held in broker-managed accounts. The assets are insured by the Securities Investor Protection Corporation (SIPC), which protects investors for up to \$500,000 including a maximum of \$250,000 for claims of cash if the brokerage firm holding the assets becomes insolvent, but it does not insure the underlying assets of \$9,448,186 as of December 31, 2016. Management does not consider this a significant concentration of credit risk.

# NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

## NOTES TO FINANCIAL STATEMENTS

### NOTE 4 - COMMITMENTS AND CONTINGENCIES

The Alliance has entered into operating lease agreements for office space and a liquid fuels research center. Total rent expense under these leases was \$92,118 and \$20,448 for the year ended December 31, 2016 and 2015, respectively. Future minimum lease payments are as follows for the years ending December 31:

2017	\$	77,407
2018		79,729
2019		82,121
2020		<u>84,584</u>
Total	\$	<u>323,841</u>

From time to time, the Alliance may receive inquiries from government agencies, because of the nature of its funding sources. Management does not expect the result of such inquiries to impact the financial information of the Alliance.

### NOTE 5 - PROGRAM SERVICES

The NORA Public Law 113-79 places 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 campaigns are undertaken based on the estimates. Actual assessments revenue differ from the estimates. 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 non-compliance with the statute.

#### Research, Development, and Demonstration

The NORA Public Law 113-79 requires the Alliance to ensure not less than 30 percent of the assessments collected for each calendar year under the NORA Public Law 113-79 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.

In 2016, the Alliance granted or expended \$1,477,747 for the research, development, and demonstration program, including \$1,013,234 in grants and spending of past years assessments revenue. The Alliance also budgeted \$2,200,000 in additional national spending from 2016 assessments revenue to be spent subsequent to year end for the research, development, and demonstration program making the total for 2016, 31 percent of net assessments revenue. Additionally, unallocated state rebates of 2016 assessments revenue will be used for the research, development, and demonstration program.

## NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

### NOTES TO FINANCIAL STATEMENTS

#### NOTE 5 - PROGRAM SERVICES (continued)

##### Heating Oil Efficiency and Upgrade

The NORA Public Law 113-79 requires the Alliance to ensure not less than 15 percent of the assessments collected for each calendar year under the NORA Public Law 113-79 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 2016, the Alliance granted or expended \$1,373,239 for the heating oil efficiency and upgrade program, including \$166,096 in grants and spending of past years assessments revenue. The Alliance also budgeted \$100,000 in additional national spending from 2016 assessments revenue for the heating oil efficiency and upgrade program, of which \$93,635 remained unspent as of December 31, 2016, making the total for 2016, 15 percent of net assessments revenue. Additionally, unallocated state rebates of 2016 assessments revenue will be used for the heating oil efficiency and upgrade program.

##### Consumer Education, Safety, and Training

The NORA Public Law 113-79 requires the Alliance to ensure not more than 30 percent of the assessments collected for each calendar year under the NORA Public Law 113-79 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.

In 2016, the Alliance granted or expended \$2,757,703 for the consumer education, safety, and training program, including \$196,552 in grants and spending of past years assessments revenue. The Alliance also budgeted \$325,000 in additional national spending from 2016 assessments revenue for the consumer education, safety, and training program, of which \$40,409 remained unspent as of December 31, 2016, making the total for 2016, 30 percent of net assessments revenue program.

##### Unallocated State Rebates

In addition to the specific program commitments discussed previously, the Alliance has committed \$2,042,506, which is 24 percent of net 2016 assessment revenue, for state rebates that have not yet been allocated to a program specified in the NORA Public Law 113-79. 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 NORA Public Law 113-79 as discussed previously.



# NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

## NOTES TO FINANCIAL STATEMENTS

### NOTE 6 - STATE GRANTS PAYABLE AND OBLIGATION FOR UNALLOCATED REBATES

Under NORA Public Law 113-79, the Alliance has entered into various agreements with state organizations, which may require periodic payment of grant funds. The outstanding grant liability by program is as follows as of December 31:

	<u>2016</u>	<u>2015</u>
Research, development, and demonstration	\$ 983,492	\$ 859,871
Heating oil efficiency and upgrade	1,838,954	1,376,589
Consumer education, safety, and training	1,211,607	1,267,705
Unallocated state rebates	<u>2,930,877</u>	<u>2,314,389</u>
Total	<u>\$ 6,964,930</u>	<u>\$ 5,818,554</u>

### NOTE 7 - STATE GRANT REBATES REMAINING UNDER NORA PUBLIC LAW 106-469

Under NORA Public Law 106-469, the Alliance entered into various grant agreements, which may require periodic payments of grant funds. The outstanding grant liability, which is recorded as a current liability in the accompanying statements of financial position, was granted to state organizations in accordance with NORA Public Law 106-469. As of December 31, 2015, \$601,592 remained outstanding and was fully expended in the year ended December 31, 2016.

### NOTE 8 - ADMINISTRATIVE EXPENSE CAP

NORA Public Law 113-79 requires the Alliance to limit expenditures for “Administrative” costs to five percent of revenue generated by assessment remittances beginning April 1, 2014. In 2016, the Alliance expended \$248,101 for administrative expenses, which was 3 percent of net assessments revenue in the year ended December 31, 2016. Thus, management believes the Alliance is in compliance with NORA Public Law 113-79.

### NOTE 9 - COLLECTION COSTS

The Alliance has also 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 NORA Public Law 113-79. Collection costs were \$118,876 and \$180,385 for the years ended December 31, 2016 and 2015, respectively.

### NOTE 10 - DESIGNATED NET ASSETS

#### Pre-2014 Reauthorization Designated Net Assets

As discussed previously, NORA Public Law 113-79 became effective April 1, 2014. The Alliance designated the remaining net assets under the former NORA Public Law 106-469 for use in a national oilheat education program. As of December 31, 2016 and 2015, \$55,933 and \$472,266, respectively, remained unspent and are designated for future use.

NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

NOTES TO FINANCIAL STATEMENTS

NOTE 10 - DESIGNATED NET ASSETS (continued)

State Grants and Rebates Made After Year End Designated Net Assets

The Alliance establishes a budget for net assessments revenue and makes state grants and obligations for state rebates based on this budget. Actual results were not substantially different than this initial budget.

National Spending Not Yet Incurred Designated Net Assets

Included within the budget is \$3,816,413 and \$2,453,593 in national spending of assessments revenue, which had not yet been incurred as of December 31, 2016 and 2015, respectively. The Alliance has designated net assets in these amounts for future program spending, some of which, the Alliance has approved contracts to expend.

NOTE 11 - PROPERTY AND EQUIPMENT

Property and equipment consist of the following as of December 31:

	<u>2016</u>	<u>2015</u>
Furniture	\$ 5,641	\$ 3,372
Equipment	68,206	8,449
Website development costs	45,450	45,450
Computers	10,724	7,944
Less: accumulated depreciation and amortization	<u>( 51,899)</u>	<u>( 27,871)</u>
Total	<u>\$ 78,122</u>	<u>\$ 37,344</u>

Total depreciation and amortization expense on property and equipment for the years ended December 31, 2016 and 2015, was \$24,029 and \$9,277, respectively.

NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

SUPPLEMENTAL SCHEDULE OF EXPENSES BY STATE/JURISDICTION -  
RESEARCH, DEVELOPMENT, AND DEMONSTRATION  
FOR THE YEAR ENDED DECEMBER 31, 2016

	Amounts Granted/ Expended in 2016	2016 State Grants Made After Year End	2016 National Spending Not Yet Incurred	Total
STATE GRANTS-				
Connecticut	\$ 61,195	\$ -	\$ -	\$ 61,195
Delaware	3,784	-	-	3,784
Idaho	213	-	-	213
Indiana	1,027	-	-	1,027
Kentucky	6,483	-	-	6,483
Maine	36,637	-	-	36,637
Maryland	20,230	-	-	20,230
Massachusetts	71,887	-	-	71,887
Michigan	11,695	-	-	11,695
Nevada	100	-	-	100
New Hampshire	25,147	-	-	25,147
New Jersey	43,699	-	-	43,699
New York -				
NYOHA	33,024	-	-	33,024
UNYEA	25,925	-	-	25,925
HVOEC	15,226	-	-	15,226
OHILI	28,703	-	-	28,703
ESEA	11,431	-	-	11,431
North Carolina	18,079	-	-	18,079
Ohio	17,572	-	-	17,572
Pennsylvania	81,353	-	-	81,353
Rhode Island	15,266	-	-	15,266
South Carolina	7,042	-	-	7,042
Virginia	20,014	-	-	20,014
Vermont	13,762	-	-	13,762
Washington	1,578	-	-	1,578
Washington, D.C.	303	-	-	303
Wisconsin	15,270	-	-	15,270
NATIONAL	<u>891,102</u>	<u>-</u>	<u>2,200,000</u>	<u>3,091,102</u>
TOTAL STATE GRANTS AND NATIONAL SPENDING	<u>\$ 1,477,747</u>	<u>\$ -</u>	<u>\$ 2,200,000</u>	<u>\$ 3,677,747</u>

In addition to these amounts, the unallocated state rebates detailed in 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, 2016

	Amounts Granted/ Expended in 2016	2016 State Grants Made After Year End	2016 National Spending Not Yet Incurred	Total
STATE GRANTS-				
Connecticut	\$ 134,910	\$ -	\$ -	\$ 134,910
Delaware	8,343	-	-	8,343
Idaho	470	-	-	470
Indiana	2,264	-	-	2,264
Kentucky	14,293	-	-	14,293
Maine	80,771	-	-	80,771
Maryland	44,600	-	-	44,600
Massachusetts	158,481	-	-	158,481
Michigan	25,782	-	-	25,782
Nevada	220	-	-	220
New Hampshire	55,439	-	-	55,439
New Jersey	96,338	-	-	96,338
New York -				
NYOHA	72,805	-	-	72,805
UNYEA	57,155	-	-	57,155
HVOEC	33,567	-	-	33,567
OHILI	63,279	-	-	63,279
ESEA	25,201	-	-	25,201
North Carolina	39,857	-	-	39,857
Ohio	38,740	-	-	38,740
Pennsylvania	179,352	-	-	179,352
Rhode Island	33,655	-	-	33,655
South Carolina	15,525	-	-	15,525
Virginia	44,124	-	-	44,124
Vermont	30,340	-	-	30,340
Washington	3,479	-	-	3,479
Washington, D.C.	668	-	-	668
Wisconsin	33,665	-	-	33,665
NATIONAL	<u>79,916</u>	<u>-</u>	<u>93,635</u>	<u>173,551</u>
TOTAL STATE GRANTS AND NATIONAL SPENDING	<u>\$ 1,373,239</u>	<u>\$ -</u>	<u>\$ 93,635</u>	<u>\$ 1,466,874</u>

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, 2016

	Amounts Granted/ Expended in 2016	2016 State Grants Made After Year End	2016 National Spending Not Yet Incurred	Total
STATE GRANTS-				
Connecticut	\$ 256,781	\$ -	\$ -	\$ 256,781
Delaware	15,879	-	-	15,879
Idaho	895	-	-	895
Indiana	4,308	-	-	4,308
Kentucky	27,205	-	-	27,205
Maine	153,736	-	-	153,736
Maryland	84,889	-	-	84,889
Massachusetts	301,645	-	-	301,645
Michigan	49,073	-	-	49,073
Nevada	419	-	-	419
New Hampshire	105,519	-	-	105,519
New Jersey	183,365	-	-	183,365
New York -				
NYOHA	138,573	-	-	138,573
UNYEA	108,787	-	-	108,787
HVOEC	63,891	-	-	63,891
OHILI	120,442	-	-	120,442
ESEA	47,966	-	-	47,966
North Carolina	75,862	-	-	75,862
Ohio	73,735	-	-	73,735
Pennsylvania	341,370	-	-	341,370
Rhode Island	64,057	-	-	64,057
South Carolina	29,549	-	-	29,549
Virginia	83,983	-	-	83,983
Vermont	57,747	-	-	57,747
Washington	6,622	-	-	6,622
Washington, D.C.	1,272	-	-	1,272
Wisconsin	64,076	-	-	64,076
NATIONAL	<u>296,057</u>	<u>-</u>	<u>40,409</u>	<u>336,466</u>
TOTAL STATE GRANTS AND NATIONAL SPENDING	<u>\$ 2,757,703</u>	<u>\$ -</u>	<u>\$ 40,409</u>	<u>\$ 2,798,112</u>

NATIONAL OILHEAT RESEARCH ALLIANCE, INC.

SUPPLEMENTAL SCHEDULE OF EXPENSES BY STATE/JURISDICTION -  
UNALLOCATED STATE REBATES  
FOR THE YEAR ENDED DECEMBER 31, 2016

	Amounts Granted/ Expended in 2016	2016 State Rebates After Year End	2016 National Spending Not Yet Incurred	Total
UNALLOCATED STATE REBATES-				
Connecticut	\$ 213,059	\$ -	\$ -	\$ 213,059
Delaware	13,175	-	-	13,175
Idaho	742	-	-	742
Indiana	3,575	-	-	3,575
Kentucky	22,573	-	-	22,573
Maine	127,560	-	-	127,560
Maryland	70,435	-	-	70,435
Massachusetts	250,285	-	-	250,285
Michigan	40,717	-	-	40,717
Nevada	347	-	-	347
New Hampshire	87,553	-	-	87,553
New Jersey	152,144	-	-	152,144
New York -				
NYOHA	114,979	-	-	114,979
UNYEA	90,264	-	-	90,264
HVOEC	53,012	-	-	53,012
OHILI	99,935	-	-	99,935
ESEA	39,799	-	-	39,799
North Carolina	62,946	-	-	62,946
Ohio	61,180	-	-	61,180
Pennsylvania	283,246	-	-	283,246
Rhode Island	53,150	-	-	53,150
South Carolina	24,517	-	-	24,517
Virginia	69,683	-	-	69,683
Vermont	47,915	-	-	47,915
Washington	5,494	-	-	5,494
Washington, D.C.	1,055	-	-	1,055
Wisconsin	53,166	-	-	53,166
<b>TOTAL UNALLOCATED STATE REBATES</b>	<b><u>\$ 2,042,506</u></b>	<b><u>\$ -</u></b>	<b><u>\$ -</u></b>	<b><u>\$ 2,042,506</u></b>

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.

Income		2014	2017		2018	2019	2019 p/y
Collections and Assessments							
	Collections	5,160,000.00	9,194,868.60		\$ 9,575,678.00	\$ 9,384,164.44	\$ 1,876,832.89
	Collection Costs	70,000.00	170,000.00		\$ 120,000.00	\$ 120,000.00	\$ 40,000.00
	Net Collections	5,090,000.00	9,024,868.60		<b>\$ 9,455,678.00</b>	<b>\$ 9,264,164.44</b>	<b>\$ 1,836,832.89</b>
In Kind Contributions							
	Sales Revenue	60,000.00	100,000.00				
	Other Revenue (Grants, etc)	25,000.00	200,000.00				
Total Income		5,175,000.00	9,324,868.60				
Proogram Expenses							
Consumer Education and Training (Max 30%)		1,548,000.00	2,758,459.58	Consumer Education and Training (Max 30%)	<b>\$ 2,872,702.40</b>	<b>\$ 2,815,248.33</b>	<b>\$ 563,048.87</b>
	Central	300,000.00	325,000.00	Central	<b>\$ 350,000.00</b>	<b>\$ 350,000.00</b>	<b>\$ 70,000.00</b>
	States	1,248,000.00	2,433,459.58	States	\$ 2,522,702.40	\$ 2,465,248.33	\$ 493,048.87
Research Development and Demonstration (Min. 30%)		1,548,000.00	2,758,461.58	Research Development and Demonstration (Min. 30%)	<b>\$ 2,872,704.40</b>	<b>\$ 2,815,250.33</b>	<b>\$ 563,050.87</b>
	Central	1,300,000.00	2,200,000.00	Central	<b>\$ 2,100,000.00</b>	<b>\$ 2,100,000.00</b>	<b>\$ 420,000.00</b>
	States	248,000.00	558,461.58	States	\$ 772,704.40	\$ 715,250.33	\$ 143,050.87
	50% Matching R&D Demonstration			Demonstration			
	Central			Central			
	States			States			
Home Energy Efficiency Program (Min 15%)		774,000.00	1,379,230.29	Home Energy Efficiency Program (Min 15%)	<b>\$ 1,436,352.70</b>	<b>\$ 1,407,625.67</b>	<b>\$ 281,525.93</b>
	Central	100,000.00	100,000.00	Central	\$ 80,000.00	\$ 80,000.00	\$ 16,000.00
	States	674,000.00	1,279,230.29	States	\$ 1,356,352.70	\$ 1,327,625.67	\$ 265,525.93
State Rebates (Unallocated Funds )		907,000.00	- 1,993,717.15	State Rebates (Unallocated Funds )	\$ 1,986,818.50	\$ 1,936,940.11	\$ 365,387.22
	Research and Development			Research and Development			
	Home Energy Efficiency			Home Energy Efficiency			
Office Unallocated Expenses				<b>Office Unallocated Expense:</b>	\$ 75,000.00	\$ 75,000.00	\$ 15,000.00
	Salaries and Consulting (Admin)	60,000.00	75,000.00	Salaries and Consulting (Admin)	\$ 50,000.00	\$ 50,000.00	\$ 10,000.00
	Accounting (Admin)	100,000.00	100,000.00	Accounting (Admin)	\$ 15,000.00	\$ 15,000.00	\$ 3,000.00
	Insurance (Admin)	10,000.00	16,000.00	Insurance (Admin)	\$ 3,000.00	\$ 3,000.00	\$ 600.00
	Taxes	20,000.00	7,000.00	Taxes	\$ 3,000.00	\$ 3,000.00	\$ 600.00
	Postage	5,000.00	1,000.00	Postage	\$ 30,000.00	\$ 30,000.00	\$ 6,000.00
	Web Pages	100,000.00	50,000.00	Web Pages	\$ 45,000.00	\$ 45,000.00	\$ 15,000.00
	Annual Report	15,000.00	15,000.00	Annual Report	\$ 22,000.00	\$ 24,000.00	\$ 4,800.00
	Rent (Admin)	15,000.00	20,000.00	Rent and Telephone	\$ 1,000.00	\$ 1,000.00	\$ 200.00
	Legal		30,000.00	Travel	\$ 8,000.00	\$ 8,000.00	\$ 1,600.00
	Travel	10,000.00	12,000.00	Meeting Expenses	\$ 2,000.00	\$ 2,000.00	\$ 400.00
	Meetings		15,000.00	Office Supplies	\$ 100.00	\$ 100.00	\$ 20.00
	Other (Telephone, Supplies, Maintenance, Computer)/	15,000.00	15,000.00	Dues & Memberships	\$ 6,000.00	\$ 6,000.00	\$ 1,200.00
	Total Unallocated Expenses	350,000.00	356,000.00	Bank Fees	\$ 15,000.00	\$ 15,000.00	\$ 3,000.00
Other Expenses/ (income)				Legal Expense	\$ 3,000.00	\$ 3,000.00	\$ 600.00
	Cost of Goods Sold	50,000.00	80,000.00	Professional Fees	\$ 1,000.00	\$ 1,000.00	\$ 200.00
	Interest	(2,000.00)	(1,000.00)	Misc Expense	\$ 1,000.00	\$ 1,000.00	\$ 200.00
	Total Other Expenses	48,000.00	79,000.00	Advertising Expense	\$ 1,000.00	\$ 1,000.00	\$ 200.00
Net Revenue/(Expense)		0.00	0.00	Fixed Assets <\$1,000	\$ 5,000.00	\$ 5,000.00	\$ 1,000.00
				Equipment Maintenance	\$ 1,000.00	\$ 1,000.00	\$ 200.00
				Bad Debts			
				Central Expenses	<b>\$ 287,100.00</b>	<b>\$ 289,100.00</b>	<b>\$ 63,820.00</b>

National Oilheat Research Alliance

For the Four Months Ending April 30, 2017

	Total Budget	Actual 2014	Actual 2015	Actual 2016	Actual 2017	Total Actual	Remaining	remaining/2017 Percentage
CT 14 E&T	\$116,634.40		\$116,634.40			\$116,634.40		
CT 15 E&T	227,946.61		190,577.89	37,368.72		227,946.61		
CT 16 E&T	256,780.56			256,780.56		256,780.56		
CT 17 E&T	276,684.35			5,045.00	59,794.81	64,839.81	211,844.54	
TOTAL CT E&T	878,045.92		307,212.29	299,194.28	59,794.81	666,201.38	211,844.54	77%
CT 14 R&D	23,177.73			23,177.73		23,177.73		
CT 15 R&D	68,833.01			3,318.64	1,716.93	5,035.57	63,797.44	
CT 16 R&D	61,194.59						61,194.59	
CT 17 R&D	63,497.08						63,497.08	
TOTAL CT R&D	216,702.41			26,496.37	1,716.93	28,213.30	188,489.11	297%
CT 14 EE	62,991.10		46,620.38	16,370.72		62,991.10		
CT 15 EE	118,657.03			91,120.34	27,536.69	118,657.03		
CT 16 EE	134,909.87				2,590.99	2,590.99	132,318.88	
CT 17 EE	140,331.97						140,331.97	
TOTAL CT EE	456,889.97		46,620.38	107,491.06	30,127.68	184,239.12	272,650.85	194%
CT 14 REBATE	84,766.95			84,766.95		84,766.95		
CT 15 REBATE	164,494.99			110,626.04	53,868.95	164,494.99		
CT 16 REBATE	213,059.19						213,059.19	
CT 17 REBATE	206,788.12						206,788.12	
TOTAL CT REBATE	669,109.25			195,392.99	53,868.95	249,261.94	419,847.31	203%
DC 14 E&T	985.31						985.31	
DC 15 E&T	1,925.62						1,925.62	
DC 16 E&T	1,271.60						1,271.60	
DC 17 E&T	1,703.42						1,703.42	
TOTAL DC E&T	5,885.95						5,885.95	346%
DC 14 R&D	195.80						195.80	
DC 15 R&D	581.48						581.48	



DC 16 R&D	303.04					303.04	
DC 17 R&D	390.92					390.92	
TOTAL DC R&D	1,471.24					1,471.24	376%
DC 14 EE	532.13					532.13	
DC 15 EE	1,002.38					1,002.38	
DC 16 EE	668.09					668.09	
DC 17 EE	863.96					863.96	
TOTAL DC EE	3,066.56					3,066.56	355%
DC 14 REBATE	716.08					716.08	
DC 15 REBATE	1,389.60					1,389.60	
DC 16 REBATE	1,055.09					1,055.09	
DC 17 REBATE	1,273.10					1,273.10	
	4,433.87					4,433.87	348%
DE 14 E&T	10,282.37	10,282.37			10,282.37		
DE 15 E&T	20,095.20	2,470.11	17,625.09		20,095.20		
DE 16 E&T	15,879.15		1,010.45		1,010.45	14,868.70	
DE 17 E&T	14,844.10					14,844.10	
TOTAL DE E&T	61,100.82	12,752.48	18,635.54		31,388.02	29,712.80	200%
DE 14 R&D	2,043.29					2,043.29	
DE 15 R&D	6,068.15					6,068.15	
DE 16 R&D	3,784.24					3,784.24	
DE 17 R&D	3,406.62					3,406.62	
TOTAL DE R&D	15,302.30					15,302.30	449%
DE 14 EE	5,553.14	2,510.44	3,042.70		5,553.14		
DE 15 EE	10,460.51		5,354.24	750.00	6,104.24	4,356.27	
DE 16 EE	8,342.74					8,342.74	
DE 17 EE	7,528.80					7,528.80	
TOTAL DE EE	31,885.19	2,510.44	8,396.94	750.00	11,657.38	20,227.81	269%
DE 14 REBATE	7,472.84		7,472.84		7,472.84		
DE 15 REBATE	14,501.47					14,501.47	
DE 16 REBATE	13,175.45					13,175.45	
DE 17 REBATE	11,094.17					11,094.17	
TOTAL DE REBATE	46,243.93		7,472.84		7,472.84	38,771.09	349%

ID 14 E&T	1,121.74					1,121.74	
ID 15 E&T	2,192.26					2,192.26	
ID 16 E&T	894.57					894.57	
ID 17 E&T	973.38					973.38	
TOTAL ID E&T	5,181.95					5,181.95	532%
ID 14 R&D	222.91					222.91	
ID 15 R&D	662.00					662.00	
ID 16 R&D	213.19					213.19	
ID 17 R&D	223.38					223.38	
TOTAL ID R&D	1,321.48					1,321.48	592%
ID 14 EE	605.81					605.81	
ID 15 EE	1,141.17					1,141.17	
ID 16 EE	470.00					470.00	
ID 17 EE	493.69					493.69	
TOTAL ID EE	2,710.67					2,710.67	549%
ID 14 REBATE	815.24					815.24	
ID 15 REBATE	1,582.02					1,582.02	
ID 16 REBATE	742.25					742.25	
ID 17 REBATE	727.49					727.49	
TOTAL ID REBATE	3,867.00					3,867.00	532%
IN 14 E&T	2,792.20	1,925.58	610.00		2,535.58	256.62	
IN 15 E&T	5,456.90					5,456.90	
IN 16 E&T	4,308.49					4,308.49	
IN 17 E&T	3,406.84					3,406.84	
TOTAL IN E&T	15,964.43	1,925.58	610.00		2,535.58	13,428.85	394%
IN 14 R&D	554.86					554.86	
IN 15 R&D	1,647.82					1,647.82	
IN 16 R&D	1,026.78					1,026.78	
IN 17 R&D	781.85					781.85	
TOTAL IN R&D	1,388,486.55	63,808.88	337,999.37	84,746.63	486,554.88	4,011.31	513%
IN 14 EE	1,507.97	1,507.97			1,507.97		
IN 15 EE	2,840.57		1,221.53		1,221.53	1,619.04	
IN 16 EE	2,263.63					2,263.63	

IN 17 EE	1,727.92						1,727.92	
TOTAL IN EE	8,340.09		1,507.97	1,221.53		2,729.50	5,610.59	325%
IN 14 REBATE	2,029.27		417.62	1,507.97		1,925.59	103.68	
IN 15 REBATE	3,937.91						3,937.91	
IN 16 REBATE	3,574.89						3,574.89	
IN 17 REBATE	2,546.20						2,546.20	
TOTAL IN REBATE	12,088.27		417.62	1,507.97		1,925.59	10,162.68	399%
KY 14 E&T	20,596.48	4,226.56	16,369.92			20,596.48		
KY 15 E&T	40,252.45		16,179.49	20,659.64	333.48	37,172.61	3,079.84	
KY 16 E&T	27,204.92						27,204.92	
KY 17 E&T	32,608.36						32,608.36	
TOTAL KY E&T	120,662.21	4,226.56	32,549.41	20,659.64	333.48	57,769.09	62,893.12	193%
KY 14 R&D	4,092.89	3,846.00	246.89			4,092.89		
KY 15 R&D	12,155.03		11,797.76	357.27		12,155.03		
KY 16 R&D	6,483.33			6,237.61	245.72	6,483.33		
KY 17 R&D	7,483.39				5,687.41	5,687.41	1,795.98	
TOTAL KY R&D	30,214.64	3,846.00	12,044.65	6,594.88	5,933.13	28,418.66	1,795.98	24%
KY 14 EE	11,123.42	8,865.93	2,257.49			11,123.42		
KY 15 EE	20,953.31		16,687.63	4,265.68		20,953.31		
KY 16 EE	14,293.19			7,266.03		7,266.03	7,027.16	
KY 17 EE	16,538.68						16,538.68	
TOTAL KY EE	62,908.60	8,865.93	18,945.12	11,531.71		39,342.76	23,565.84	142%
KY 14 REBATE	14,968.76		14,968.76			14,968.76		
KY 15 REBATE	29,047.71			29,047.71		29,047.71		
KY 16 REBATE	22,572.81			22,200.28	372.53	22,572.81		
KY 17 REBATE	24,370.81						24,370.81	
TOTAL KY REBATE	90,960.09		14,968.76	51,247.99	372.53	66,589.28	24,370.81	100%
MA 14 E&T	138,514.41		138,514.41			138,514.41		
MA 15 E&T	270,703.73		59,543.18	201,124.58	10,035.97	270,703.73		
MA 16 E&T	301,645.43				17,238.10	17,238.10	284,407.33	
MA 17 E&T	294,691.96						294,691.96	
TOTAL MA E&T	1,005,555.53		198,057.59	201,124.58	27,274.07	426,456.24	579,099.29	197%

MA 14 R&D	27,525.30		24,539.52	2,985.78		27,525.30		
MA 15 R&D	81,744.37		1,230.20	80,514.17		81,744.37		
MA 16 R&D	71,886.55				3,061.15	3,061.15	68,825.40	
MA 17 R&D	67,629.70						67,629.70	
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TOTAL MA R&D	248,785.92		25,769.72	83,499.95	3,061.15	112,330.82	136,455.10	202%
MA 14 EE	74,806.66		69,076.57	5,730.09		74,806.66		
MA 15 EE	140,914.14			68,127.19	72,786.95	140,914.14		
MA 16 EE	158,481.41						158,481.41	
MA 17 EE	149,465.28						149,465.28	
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TOTAL MA EE	523,667.49		69,076.57	73,857.28	72,786.95	215,720.80	307,946.69	206%
MA 14 REBATE	100,667.12			100,667.12		100,667.12		
MA 15 REBATE	195,350.17			100,801.33	46,180.18	146,981.51	48,368.66	
MA 16 REBATE	250,285.04						250,285.04	
MA 17 REBATE	220,246.63						220,246.63	
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TOTAL MA REBATE	766,548.96			201,468.45	46,180.18	247,648.63	518,900.33	236%
MD 14 E&T	37,071.13	41,165.68	(4,094.55)			37,071.13		
MD 15 E&T	72,449.46		67,231.81	5,217.65		72,449.46		
MD 16 E&T	84,888.96			84,888.96		84,888.96		
MD 17 E&T	75,923.94				34,165.00	34,165.00	41,758.94	
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TOTAL MD E&T	270,333.49	41,165.68	63,137.26	90,106.61	34,165.00	228,574.55	41,758.94	55%
MD 14 R&D	7,366.70	1,700.00		5,666.70		7,366.70		
MD 15 R&D	21,877.56			643.30		643.30	21,234.26	
MD 16 R&D	20,230.29						20,230.29	
MD 17 R&D	17,424.00						17,424.00	
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TOTAL MD R&D	66,898.55	1,700.00		6,310.00		8,010.00	58,888.55	338%
MD 14 EE	20,020.79	15,400.00	4,620.79			20,020.79		
MD 15 EE	37,713.38		1,087.81	36,625.57		37,713.38		
MD 16 EE	44,599.79			44,599.79		44,599.79		
MD 17 EE	38,507.98				38,507.98	38,507.98		
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TOTAL MD EE	140,841.94	15,400.00	5,708.60	81,225.36	38,507.98	140,841.94		0%
MD 14 REBATE	26,941.92		26,941.92			26,941.92		
MD 15 REBATE	52,282.30			52,282.30		52,282.30		
MD 16 REBATE	70,435.13			70,435.13		70,435.13		
MD 17 REBATE	56,743.97				12,957.02	12,957.02	43,786.95	

TOTAL MD REBATE	206,403.32	26,941.92	122,717.43	12,957.02	162,616.37	43,786.95	77%
ME 14 E&T	70,733.00	38,206.01	32,526.99		70,733.00		
ME 15 E&T	138,236.06		138,236.06		138,236.06		
ME 16 E&T	153,735.76		49,747.76	42,046.97	91,794.73	61,941.03	
ME 17 E&T	180,319.35					180,319.35	
TOTAL ME E&T	543,024.17	38,206.01	220,510.81	42,046.97	300,763.79	242,260.38	134%
ME 14 R&D	14,055.92	14,055.92			14,055.92		
ME 15 R&D	41,743.13		24,644.38	17,098.75	41,743.13		
ME 16 R&D	36,637.49					36,637.49	
ME 17 R&D	41,382.00					41,382.00	
TOTAL ME R&D	133,818.54	14,055.92	24,644.38	17,098.75	55,799.05	78,019.49	189%
ME 14 EE	38,200.35	26,410.67	11,789.68		38,200.35		
ME 15 EE	71,958.43		715.80	13,372.53	14,088.33	57,870.10	
ME 16 EE	80,771.19					80,771.19	
ME 17 EE	91,456.46					91,456.46	
TOTAL ME EE	282,386.43	26,410.67	12,505.48	13,372.53	52,288.68	230,097.75	252%
ME 14 REBATE	51,406.11	18,498.23	32,907.88		51,406.11		
ME 15 REBATE	99,756.43		4,355.64	29,513.59	33,869.23	65,887.20	
ME 16 REBATE	127,559.56					127,559.56	
ME 17 REBATE	134,766.93					134,766.93	
TOTAL ME REBATE	413,489.03	18,498.23	37,263.52	29,513.59	85,275.34	328,213.69	244%
MI 14 E&T	38,065.57	25,865.00	12,200.57		38,065.57		
MI 15 E&T	74,392.92		36,907.43	37,485.49	74,392.92		
MI 16 E&T	49,072.79			2,472.51	2,472.51	46,600.28	
MI 17 E&T	77,384.01					77,384.01	
TOTAL MI E&T	238,915.29	25,865.00	49,108.00	39,958.00	114,931.00	123,984.29	160%
MI 14 R&D	7,564.31		7,564.31		7,564.31		
MI 15 R&D	22,464.42		11,385.29	11,079.13	22,464.42		
MI 16 R&D	11,694.77					11,694.77	
MI 17 R&D	17,759.08					17,759.08	
TOTAL MI R&D	59,482.58		18,949.60	11,079.13	30,028.73	29,453.85	166%
MI 14 EE	20,557.85		10,722.49	9,835.36	20,557.85		

MI 15 EE	38,725.04			4,277.51	20,164.64	24,442.15	14,282.89	
MI 16 EE	25,782.34						25,782.34	
MI 17 EE	39,248.52						39,248.52	
TOTAL MI EE	124,313.75			15,000.00	30,000.00	45,000.00	79,313.75	202%
MI 14 REBATE	27,664.64			27,664.64		27,664.64		
MI 15 REBATE	53,684.77				18,920.87	18,920.87	34,763.90	
MI 16 REBATE	40,717.29						40,717.29	
MI 17 REBATE	57,835.20						57,835.20	
TOTAL MI REBATE	179,901.90			27,664.64	18,920.87	46,585.51	133,316.39	231%
NC 14 E&T	39,441.56	20,209.84	19,231.72			39,441.56		
NC 15 E&T	77,082.07		60,632.40	16,449.67		77,082.07		
NC 16 E&T	75,862.48			73,589.90	2,272.58	75,862.48		
NC 17 E&T	78,357.40				40,227.42	40,227.42	38,129.98	
TOTAL NC E&T	270,743.51	20,209.84	79,864.12	90,039.57	42,500.00	232,613.53	38,129.98	49%
NC 14 R&D	7,837.75	3,962.48	3,875.27			7,837.75		
NC 15 R&D	23,276.46		4,085.44	12,191.02	7,000.00	23,276.46		
NC 16 R&D	18,079.15			18,079.15		18,079.15		
NC 17 R&D	17,982.46				17,000.00	17,000.00	982.46	
TOTAL NC R&D	67,175.82	3,962.48	7,960.71	30,270.17	24,000.00	66,193.36	982.46	5%
NC 14 EE	21,300.97	21,920.00	(619.03)			21,300.97		
NC 15 EE	40,124.88		39,020.00	104.88	1,000.00	40,124.88		
NC 16 EE	39,857.37			39,857.37		39,857.37		
NC 17 EE	39,742.21				39,742.21	39,742.21		
TOTAL NC EE	141,025.43	21,920.00	38,400.97	39,962.25	40,742.21	141,025.43		0%
NC 14 REBATE	28,664.66		28,664.66			28,664.66		
NC 15 REBATE	55,625.37			60,625.37	(5,000.00)	55,625.37		
NC 16 REBATE	62,945.57			30,183.67	32,761.90	62,945.57		
NC 17 REBATE	58,562.69				10,609.59	10,609.59	47,953.10	
TOTAL NC REBATE	205,798.29		28,664.66	90,809.04	38,371.49	157,845.19	47,953.10	82%
NH 14 E&T	60,173.75		60,173.75			60,173.75		
NH 15 E&T	117,599.73		102,721.25	14,878.48		117,599.73		
NH 16 E&T	105,519.06			81,373.06	11,448.19	92,821.25	12,697.81	
NH 17 E&T	109,749.03						109,749.03	

TOTAL NH E&T	393,041.57		162,895.00	96,251.54	11,448.19	270,594.73	122,446.84	112%
NH 14 R&D	11,957.60						11,957.60	
NH 15 R&D	35,511.58						35,511.58	
NH 16 R&D	25,146.75						25,146.75	
NH 17 R&D	25,186.62						25,186.62	
TOTAL NH R&D	97,802.55						97,802.55	388%
NH 14 EE	32,497.68						32,497.68	
NH 15 EE	61,216.24						61,216.24	
NH 16 EE	55,438.63						55,438.63	
NH 17 EE	55,663.78						55,663.78	
TOTAL NH EE	204,816.33						204,816.33	368%
NH 14 REBATE	43,732.04						43,732.04	
NH 15 REBATE	84,864.47						84,864.47	
NH 16 REBATE	87,552.60						87,552.60	
NH 17 REBATE	82,024.14						82,024.14	
TOTAL NH REBATE	298,173.25						298,173.25	364%
NJ 14 E&T	106,379.25	76,697.13	29,682.12			106,379.25		
NJ 15 E&T	207,900.82		180,244.43	27,656.39		207,900.82		
NJ 16 E&T	183,364.89			183,364.89		183,364.89		
NJ 17 E&T	141,870.69			10,819.12		10,819.12	131,051.57	
TOTAL NJ E&T	639,515.65	76,697.13	209,926.55	221,840.40		508,464.08	131,051.57	92%
NJ 14 R&D	21,139.47		21,139.47			21,139.47		
NJ 15 R&D	62,779.79			25,000.00		25,000.00	37,779.79	
NJ 16 R&D	43,698.55			29,885.41		29,885.41	13,813.14	
NJ 17 R&D	32,558.31						32,558.31	
TOTAL NJ R&D	160,176.12		21,139.47	54,885.41		76,024.88	84,151.24	258%
NJ 14 EE	57,451.61		57,451.61			57,451.61		
NJ 15 EE	108,222.25		85,832.49	22,389.76		108,222.25		
NJ 16 EE	96,338.03			25,418.91	3,650.00	29,068.91	67,269.12	
NJ 17 EE	71,955.62						71,955.62	
TOTAL NJ EE	333,967.51		143,284.10	47,808.67	3,650.00	194,742.77	139,224.74	193%
NJ 14 REBATE	77,312.48		77,312.48			77,312.48		
NJ 15 REBATE	150,029.18			144,129.18	5,900.00	150,029.18		

NJ 16 REBATE	152,143.82						152,143.82	
NJ 17 REBATE	106,031.20						106,031.20	
TOTAL NJ REBATE	485,516.68		77,312.48	144,129.18	5,900.00	227,341.66	258,175.02	243%
NV 14 E&T	598.47						598.47	
NV 15 E&T	1,169.61						1,169.61	
NV 16 E&T	418.70						418.70	
NV 17 E&T	973.38						973.38	
TOTAL NV E&T	3,160.16						3,160.16	325%
NV 14 R&D	118.93						118.93	
NV 15 R&D	353.19						353.19	
NV 16 R&D	99.78						99.78	
NV 17 R&D	223.38						223.38	
TOTAL NV R&D	795.28						795.28	356%
NV 14 EE	323.21						323.21	
NV 15 EE	608.84						608.84	
NV 16 EE	219.98						219.98	
NV 17 EE	493.69						493.69	
TOTAL NV EE	1,645.72						1,645.72	333%
NV 14 REBATE	434.95						434.95	
NV 15 REBATE	844.04						844.04	
NV 16 REBATE	347.41						347.41	
NV 17 REBATE	727.49						727.49	
TOTAL NV REBATE	2,353.89						2,353.89	324%
NYOHA 14 E&T	82,431.97	22,767.05	59,664.92			82,431.97		
NYOHA 15 E&T	146,546.55		63,985.22	82,561.33	(53.17)	146,493.38	53.17	
NYOHA 16 E&T	138,573.39			138,494.20	79.19	138,573.39		
NYOHA 17 E&T	128,653.84			31,311.39	121,678.89	152,990.28	(24,336.44)	
TOTAL NYOHA E&T	496,205.75	22,767.05	123,650.14	252,366.92	121,704.91	520,489.02	(24,283.27)	-19%
NYOHA 14 R&D	16,380.71		6,390.96	9,365.17		15,756.13	624.58	
NYOHA 15 R&D	44,252.64			14,989.94		14,989.94	29,262.70	
NYOHA 16 R&D	33,024.08						33,024.08	
NYOHA 17 R&D	29,525.14						29,525.14	
TOTAL NYOHA R&D	123,182.57		6,390.96	24,355.11		30,746.07	92,436.50	313%



NYOHA 14 EE	44,518.55	13,357.50	31,161.05			44,518.55		
NYOHA 15 EE	76,284.43			35,194.43	40,630.58	75,825.01	459.42	
NYOHA 16 EE	72,805.04				37,556.09	37,556.09	35,248.95	
NYOHA 17 EE	65,252.15				14,330.00	14,330.00	50,922.15	
TOTAL NYOHA EE	258,860.17	13,357.50	31,161.05	35,194.43	92,516.67	172,229.65	86,630.52	133%
NYOHA 14 REBATE	59,908.49		25,301.38	34,607.11		59,908.49		
NYOHA 15 REBATE	105,753.59			50,707.18	55,046.41	105,753.59		
NYOHA 16 REBATE	114,978.85						114,978.85	
NYOHA 17 REBATE	96,153.20						96,153.20	
TOTAL NYOHA REBATE	376,794.13		25,301.38	85,314.29	55,046.41	165,662.08	211,132.05	220%
UNYEA 14 E&T	58,846.62	(26,154.05)	85,000.67			58,846.62		
UNYEA 15 E&T	114,600.41		76,428.89	38,171.52		114,600.41		
UNYEA 16 E&T	108,786.59			101,491.84	7,294.75	108,786.59		
UNYEA 17 E&T	100,999.28				44,345.25	44,345.25	56,654.03	
TOTAL UNYEA E&T	383,232.90	(26,154.05)	161,429.56	139,663.36	51,640.00	326,578.87	56,654.03	56%
UNYEA 14 R&D	11,693.88	(5,197.28)	5,197.28	11,693.88		11,693.88		
UNYEA 15 R&D	34,605.87			10,198.76	1,213.39	11,412.15	23,193.72	
UNYEA 16 R&D	25,925.45						25,925.45	
UNYEA 17 R&D	23,178.61						23,178.61	
TOTAL UNYEA R&D	95,403.81	(5,197.28)	5,197.28	21,892.64	1,213.39	23,106.03	72,297.78	312%
UNYEA 14 EE	31,780.95	(14,124.87)	14,124.87	31,780.95		31,780.95		
UNYEA 15 EE	59,654.96			5,750.00	19,289.42	25,039.42	34,615.54	
UNYEA 16 EE	57,155.36				519.60	519.60	56,635.76	
UNYEA 17 EE	51,225.98						51,225.98	
TOTAL UNYEA EE	199,817.25	(14,124.87)	14,124.87	37,530.95	19,809.02	57,339.97	142,477.28	278%
UNYEA 14 REBATE	42,767.53			42,767.53		42,767.53		
UNYEA 15 REBATE	82,700.04						82,700.04	
UNYEA 16 REBATE	90,263.77						90,263.77	
UNYEA 17 REBATE	75,484.76						75,484.76	
TOTAL UNYEA REBATE	291,216.10			42,767.53		42,767.53	248,448.57	329%
HVOHC 14 E&T	27,088.13		27,088.13			27,088.13		
HVOHC 15 E&T	67,441.84		34,167.61	33,274.23		67,441.84		
HVOHC 16 E&T	63,890.53			39,119.76	24,770.77	63,890.53		

HVOHC 17 E&T	59,317.04				36,416.23	36,416.23	22,900.81	
TOTAL HVOHC E&T	217,737.54		61,255.74	72,393.99	61,187.00	194,836.73	22,900.81	39%
HVOHC 14 R&D	5,382.90			3,261.50		3,261.50	2,121.40	
HVOHC 15 R&D	20,365.40						20,365.40	
HVOHC 16 R&D	15,226.06						15,226.06	
HVOHC 17 R&D	13,612.84						13,612.84	
TOTAL HVOHC R&D	54,587.20			3,261.50		3,261.50	51,325.70	377%
HVOHC 14 EE	14,629.32		14,192.35	436.97		14,629.32		
HVOHC 15 EE	35,106.68			35,106.68		35,106.68		
HVOHC 16 EE	33,567.43				33,567.43	33,567.43		
HVOHC 17 EE	30,085.10						30,085.10	
TOTAL HVOHC EE	113,388.53		14,192.35	35,543.65	33,567.43	83,303.43	30,085.10	100%
HVOHC 14 REBATE	19,686.64		1,593.05	18,093.59		19,686.64		
HVOHC 15 REBATE	48,668.61			22,408.76	2,040.00	24,448.76	24,219.85	
HVOHC 16 REBATE	53,012.06				4,231.57	4,231.57	48,780.49	
HVOHC 17 REBATE	44,332.32						44,332.32	
TOTAL HVOHC REBATE	165,699.63		1,593.05	40,502.35	6,271.57	48,366.97	117,332.66	265%
OHILI 14 E&T	65,151.61	36,719.05	29,810.79	(1,378.23)		65,151.61		
OHILI 15 E&T	127,784.53		118,379.75	9,404.78		127,784.53		
OHILI 16 E&T	120,442.29			120,442.29		120,442.29		
OHILI 17 E&T	111,820.63			8,014.38	42,951.96	50,966.34	60,854.29	
TOTAL OHILI E&T	425,199.06	36,719.05	148,190.54	136,483.22	42,951.96	364,344.77	60,854.29	54%
OHILI 14 R&D	12,946.80	7,714.78	5,232.02			12,946.80		
OHILI 15 R&D	38,587.08		8,137.30	27,449.78	3,000.00	38,587.08		
OHILI 16 R&D	28,703.17			28,703.17		28,703.17		
OHILI 17 R&D	25,662.04			11,514.57	5,827.50	17,342.07	8,319.97	
TOTAL OHILI R&D	105,899.09	7,714.78	13,369.32	67,667.52	8,827.50	97,579.12	8,319.97	32%
OHILI 14 EE	35,186.05	30,427.37	4,758.68			35,186.05		
OHILI 15 EE	66,517.92		12,135.27	54,382.65	(2,500.00)	64,017.92	2,500.00	
OHILI 16 EE	63,279.14			63,279.14		63,279.14		
OHILI 17 EE	56,714.48			23,406.25	1,740.00	25,146.25	31,568.23	
TOTAL OHILI EE	221,697.59	30,427.37	16,893.95	141,068.04	(760.00)	187,629.36	34,068.23	60%

OHILI 14 REBATE	47,349.77	47,349.77			47,349.77		
OHILI 15 REBATE	92,214.21		92,214.21		92,214.21		
OHILI 16 REBATE	99,934.89		99,934.89		99,934.89		
OHILI 17 REBATE	83,572.41					83,572.41	
TOTAL OHILI REBATE	323,071.28	47,349.77	192,149.10		239,498.87	83,572.41	100%
ESPA 14 E&T	25,946.48	25,946.48			25,946.48		
ESPA 15 E&T	50,708.15	45,906.39	4,801.76		50,708.15		
ESPA 16 E&T	47,965.87	469.86	43,697.42	3,780.00	47,947.28	18.59	
ESPA 17 E&T	44,532.31					44,532.31	
TOTAL ESPA E&T	169,152.81	72,322.73	48,499.18	3,780.00	124,601.91	44,550.90	100%
ESPA 14 R&D	5,156.03		5,156.03		5,156.03		
ESPA 15 R&D	15,312.33					15,312.33	
ESPA 16 R&D	11,430.97					11,430.97	
ESPA 17 R&D	10,219.85					10,219.85	
TOTAL ESPA R&D	42,119.18		5,156.03		5,156.03	36,963.15	362%
ESPA 14 EE	14,012.76					14,012.76	
ESPA 15 EE	26,396.00					26,396.00	
ESPA 16 EE	25,200.77					25,200.77	
ESPA 17 EE	22,586.41					22,586.41	
TOTAL ESPA EE	88,195.94					88,195.94	390%
ESPA 14 REBATE	18,856.94		5,993.55		5,993.55	12,863.39	
ESPA 15 REBATE	36,592.94					36,592.94	
ESPA 16 REBATE	39,798.84					39,798.84	
ESPA 17 REBATE	33,282.52					33,282.52	
TOTAL ESPA REBATE	128,531.24		5,993.55		5,993.55	122,537.69	368%
OH 14 E&T	35,311.81	35,311.81			35,311.81		
OH 15 E&T	69,011.16	31,033.56	37,977.60		69,011.16		
OH 16 E&T	73,734.81		18,265.62	250.00	18,515.62	55,219.19	
OH 17 E&T	60,836.49					60,836.49	
TOTAL OH E&T	238,894.27	66,345.37	56,243.22	250.00	122,838.59	116,055.68	191%
OH 14 R&D	7,017.09	7,017.09			7,017.09		
OH 15 R&D	20,754.20		570.00		570.00	20,184.20	
OH 16 R&D	17,572.09					17,572.09	
OH 17 R&D	13,961.54					13,961.54	

TOTAL OH R&D	59,304.92	7,017.09	570.00		7,587.09	51,717.83	370%
OH 14 EE	19,070.64		19,070.64		19,070.64		
OH 15 EE	35,923.58					35,923.58	
OH 16 EE	38,739.51					38,739.51	
OH 17 EE	30,855.76					30,855.76	
TOTAL OH EE	124,589.49		19,070.64		19,070.64	105,518.85	342%
OH 14 REBATE	25,663.31	8,416.47	2,079.36		10,495.83	15,167.48	
OH 15 REBATE	49,801.09					49,801.09	
OH 16 REBATE	61,180.17					61,180.17	
OH 17 REBATE	45,467.93					45,467.93	
TOTAL OH REBATE	182,112.50	8,416.47	2,079.36		10,495.83	171,616.67	377%
PA 14 E&T	168,801.05	168,801.05			168,801.05		
PA 15 E&T	329,894.00	8,996.53	302,777.13	18,120.34	329,894.00		
PA 16 E&T	341,369.79			92,797.90	92,797.90	248,571.89	
PA 17 E&T	341,657.73					341,657.73	
TOTAL PA E&T	1,181,722.57	177,797.58	302,777.13	110,918.24	591,492.95	590,229.62	173%
PA 14 R&D	33,543.41		21,864.92	11,678.49	33,543.41		
PA 15 R&D	99,211.29			1,337.80	1,337.80	97,873.49	
PA 16 R&D	81,353.45					81,353.45	
PA 17 R&D	78,408.01					78,408.01	
TOTAL PA R&D	292,516.16		21,864.92	13,016.29	34,881.21	257,634.95	329%
PA 14 EE	91,162.35		87,943.79	3,218.56	91,162.35		
PA 15 EE	171,725.49			12,023.49	12,023.49	159,702.00	
PA 16 EE	179,352.19					179,352.19	
PA 17 EE	173,285.92					173,285.92	
TOTAL PA EE	615,525.95		87,943.79	15,242.05	103,185.84	512,340.11	296%
PA 14 REBATE	122,676.94		75,110.06	47,566.88	122,676.94		
PA 15 REBATE	238,064.14					238,064.14	
PA 16 REBATE	283,245.63					283,245.63	
PA 17 REBATE	255,347.87					255,347.87	
TOTAL PA REBATE	899,334.58		75,110.06	47,566.88	122,676.94	776,657.64	304%
RI 14 E&T	38,991.77	31,620.00	7,371.77		38,991.77		

RI 15 E&T	76,203.03		71,436.78	4,766.25		76,203.03		
RI 16 E&T	64,057.01			45,493.75	12,981.54	58,475.29	5,581.72	
RI 17 E&T	66,433.45						66,433.45	
TOTAL RI E&T	245,685.26	31,620.00	78,808.55	50,260.00	12,981.54	173,670.09	72,015.17	108%
RI 14 R&D	7,748.36		7,748.36			7,748.36		
RI 15 R&D	22,917.06		42,016.54		(19,099.48)	22,917.06		
RI 16 R&D	15,265.73			2,164.81	13,100.92	15,265.73		
RI 17 R&D	15,246.00						15,246.00	
TOTAL RI R&D	61,177.15		49,764.90	2,164.81	(5,998.56)	45,931.15	15,246.00	100%
RI 14 EE	21,058.06		21,058.06			21,058.06		
RI 15 EE	39,667.29		13,415.88	26,251.41		39,667.29		
RI 16 EE	33,654.90			5,417.50	8,667.22	14,084.72	19,570.18	
RI 17 EE	33,694.48						33,694.48	
TOTAL RI EE	128,074.73		34,473.94	31,668.91	8,667.22	74,810.07	53,264.66	158%
RI 14 REBATE	28,337.77		28,337.77			28,337.77		
RI 15 REBATE	54,991.02			24,450.54	30,540.48	54,991.02		
RI 16 REBATE	53,150.19			135.19		135.19	53,015.00	
RI 17 REBATE	49,650.97						49,650.97	
TOTAL RI REBATE	186,129.95		28,337.77	24,585.73	30,540.48	83,463.98	102,665.97	207%
SC 14 E&T	6,063.62						6,063.62	
SC 15 E&T	11,850.35						11,850.35	
SC 16 E&T	29,548.64						29,548.64	
SC 17 E&T	29,931.55						29,931.55	
TOTAL SC E&T	77,394.16						77,394.16	259%
SC 14 R&D	1,204.95						1,204.95	
SC 15 R&D	3,563.84						3,563.84	
SC 16 R&D	7,041.88						7,041.88	
SC 17 R&D	6,869.08						6,869.08	
TOTAL SC R&D	18,679.75						18,679.75	272%
SC 14 EE	3,274.74						3,274.74	
SC 15 EE	6,168.67						6,168.67	
SC 16 EE	15,524.55						15,524.55	
SC 17 EE	15,181.03						15,181.03	

TOTAL SC EE	40,148.99					40,148.99	264%
SC 14 REBATE	4,406.81					4,406.81	
SC 15 REBATE	8,551.67					8,551.67	
SC 16 REBATE	24,517.47					24,517.47	
SC 17 REBATE	22,370.25					22,370.25	
TOTAL SC REBATE	59,846.20					59,846.20	268%
VA 14 E&T	35,296.90	20,378.87	14,918.03		35,296.90		
VA 15 E&T	68,982.01		43,441.21	2,990.00	46,431.21	22,550.80	
VA 16 E&T	83,982.86					83,982.86	
VA 17 E&T	78,357.40					78,357.40	
TOTAL VA E&T	266,619.17	20,378.87	58,359.24	2,990.00	81,728.11	184,891.06	236%
VA 14 R&D	7,014.13		7,014.13		7,014.13		
VA 15 R&D	59,105.43		50,223.32	8,882.11	59,105.43		
VA 16 R&D	20,014.35					20,014.35	
VA 17 R&D	17,982.46					17,982.46	
TOTAL VA R&D	104,116.37		57,237.45	8,882.11	66,119.56	37,996.81	211%
VA 14 EE	19,062.59	13,860.76	5,201.83		19,062.59		
VA 15 EE	35,908.41		35,908.41		35,908.41		
VA 16 EE	44,123.73					44,123.73	
VA 17 EE	39,742.21					39,742.21	
TOTAL VA EE	138,836.94	13,860.76	41,110.24		54,971.00	83,865.94	211%
VA 14 REBATE	25,652.48	2,000.00	23,652.48		25,652.48		
VA 15 REBATE	49,780.06		9,191.59	32,753.49	41,945.08	7,834.98	
VA 16 REBATE	69,683.31					69,683.31	
VA 17 REBATE	58,562.69					58,562.69	
TOTAL VA REBATE	203,678.54	2,000.00	32,844.07	32,753.49	67,597.56	136,080.98	232%
VT 14 E&T	24,615.68	24,615.68			24,615.68		
VT 15 E&T	48,107.32	10,414.83	37,692.49		48,107.32		
VT 16 E&T	57,747.34		8,744.07	8,732.27	17,476.34	40,271.00	
VT 17 E&T	59,376.41					59,376.41	
TOTAL VT E&T	189,846.75	35,030.51	46,436.56	8,732.27	90,199.34	99,647.41	168%
VT 14 R&D	4,891.58	4,891.58			4,891.58		
VT 15 R&D	14,467.64		2,221.50		2,221.50	12,246.14	

VT 16 R&D	13,762.04					13,762.04	
VT 17 R&D	13,626.46					13,626.46	
<hr/>							
TOTAL VT R&D	46,747.72		4,891.58	2,221.50	7,113.08	39,634.64	291%
VT 14 EE	13,294.05	3,319.42	8,795.22	1,179.41	13,294.05		
VT 15 EE	25,042.14			1,646.66	1,646.66	23,395.48	
VT 16 EE	30,339.86					30,339.86	
VT 17 EE	30,115.22					30,115.22	
<hr/>							
TOTAL VT EE	98,791.27	3,319.42	8,795.22	2,826.07	14,940.71	83,850.56	278%
VT 14 REBATE	17,889.76		9,735.67	8,154.09	17,889.76		
VT 15 REBATE	34,716.08					34,716.08	
VT 16 REBATE	47,914.85					47,914.85	
VT 17 REBATE	44,376.69					44,376.69	
<hr/>							
TOTAL VT REBATE	144,897.38		9,735.67	8,154.09	17,889.76	127,007.62	286%
WA 14 E&T	7,612.55		7,612.55		7,612.55		
WA 15 E&T	14,877.47		14,877.47		14,877.47		
WA 16 E&T	6,621.65		137.86	6,483.79	6,621.65		
WA 17 E&T	18,980.98					18,980.98	
<hr/>							
TOTAL WA E&T	48,092.65		22,627.88	6,483.79	29,111.67	18,980.98	100%
WA 14 R&D	1,512.75			1,512.75	1,512.75		
WA 15 R&D	4,474.20			3,470.94	3,470.94	1,003.26	
WA 16 R&D	1,578.04					1,578.04	
WA 17 R&D	4,356.00					4,356.00	
<hr/>							
TOTAL WA R&D	11,920.99			4,983.69	4,983.69	6,937.30	159%
WA 14 EE	4,111.26					4,111.26	
WA 15 EE	7,744.43					7,744.43	
WA 16 EE	3,478.94					3,478.94	
WA 17 EE	9,627.00					9,627.00	
<hr/>							
TOTAL WA EE	24,961.63					24,961.63	259%
WA 14 REBATE	5,532.52			5,532.52	5,532.52		
WA 15 REBATE	10,736.15					10,736.15	
WA 16 REBATE	5,494.20					5,494.20	
WA 17 REBATE	14,185.99					14,185.99	
<hr/>							
TOTAL WA REBATE	35,948.86			5,532.52	5,532.52	30,416.34	214%

WI 14 E&T	23,325.39		3,350.00	19,975.39		23,325.39	
WI 15 E&T	45,585.65			45,585.65		45,585.65	
WI 16 E&T	64,076.10			619.96	31,876.12	32,496.08	31,580.02
WI 17 E&T	43,072.23						43,072.23
	<hr/>						
TOTAL WI E&T	176,059.37		3,350.00	66,181.00	31,876.12	101,407.12	74,652.25
	<hr/>						
WI 14 R&D	4,635.17						4,635.17
WI 15 R&D	13,709.28						13,709.28
WI 16 R&D	15,270.28						15,270.28
WI 17 R&D	9,884.77						9,884.77
	<hr/>						
TOTAL WI R&D	43,499.50						43,499.50
	<hr/>						
WI 14 EE	12,597.20				600.00	600.00	11,997.20
WI 15 EE	23,729.49						23,729.49
WI 16 EE	33,664.93						33,664.93
WI 17 EE	21,845.87						21,845.87
	<hr/>						
TOTAL WI EE	91,837.49				600.00	600.00	91,237.49
	<hr/>						
WI 14 REBATE	16,952.02						16,952.02
WI 15 REBATE	32,896.35						32,896.35
WI 16 REBATE	53,166.03						53,166.03
WI 17 REBATE	32,191.29						32,191.29
	<hr/>						
TOTAL WI REBATE	135,205.69						135,205.69
	<hr/>						

173%

440%

418%

420%





# National Oilheat Research Alliance

May 23, 2017

# What do States Do

# Consumer Education and Training

- 1) Technician Training
- 2) Maintaining School Facilities
- 3) Professional Education
- 4) Radio Advertising
- 5) Real Estate Programs
- 6) Home Inspector Programs
- 7) Internet Advertising
- 8) Print Advertising

# Research and Development and Demonstration

- (A) IN GENERAL.—The Alliance shall ensure that not less than 30 percent of the assessments collected for each calendar year under this title 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 and the transition and facilitation of the entry of energy efficient heating systems into the marketplace. (B) COORDINATION.—The Alliance shall coordinate with the Secretary to develop priorities for the use of assessments under this paragraph. (C) PLAN.—The Alliance shall develop a coordinated research plan to carry out research programs and activities under this section. (D) REPORT.— (i) IN GENERAL.—No later than 1 year after date of enactment of this subsection, the Alliance shall prepare a report on the use of biofuels in oilheat fuel utilization equipment. (ii) CONTENTS.—The report required under clause (i) shall— (I) provide information on the environmental benefits, economic benefits, and any technical limitations on the use of biofuels in oilheat fuel utilization equipment; and (II) describe market acceptance of the fuel, and information on State and local governments that are encouraging the use of biofuels in oilheat fuel utilization equipment. (iii) COPIES.—The Alliance shall submit a copy of the report required under clause (i) to— (I) Congress; (II) the Governor of each State, and other appropriate State leaders, in which the Alliance is operating; and (III) the Administrator of the Environmental Protection Agency. (E) CONSUMER EDUCATION MATERIALS.—The Alliance, in conjunction with an institution or organization engaged in biofuels research, shall develop consumer education materials describing the benefits of using biofuels as or in oilheat fuel based on the technical information developed in the report required under subparagraph (D) 12 and other information generally available

# Research and Development

- 1) Transitioning Energy Efficiency Equipment
  - 1) Training on Fuel Saving Calculator
  - 2) Training on Sizing Equipment
  - 3) Training on Equipment Sales, focused on Energy Efficient Equipment
  - 4) Giveaway of Setback Thermostats
  - 5) Rebate Program for Furnaces and Boilers

# Bioheat Research and Development

## 2. Bioheat Activities

1. Outreach on Bioheat
2. Truck Wraps
3. Brochures for Consumers
4. Radio Outreach
5. Internet Outreach
6. Trade Shows

# Energy Efficiency

IN GENERAL.—The Alliance shall ensure that not less than 15 percent of the assessments collected for each calendar year under this title 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



# Work with the State

(B) PLAN.—The Alliance shall, to the maximum extent practicable, coordinate, develop, and implement the programs and activities of the Alliance in conjunction with existing State energy efficiency program administrators.

# State Energy Efficiency Activities

- 1) Education on New Equipment
- 2) Rebate Programs for Furnaces, Boilers and Tanks
- 3) Outreach Activities on New Equipment and Safer Equipment
- 4) NORA's Tank Training Program

# Rebates

When NORA says Rebates, we do not mean  
Customer Rebates

We Mean Rebates to State, these Rebates can be  
Used for

Research and Development Programs

Energy Efficiency Programs

ESPA 14 E&T	25,946.48	25,946.48			25,946.48		0%	E and T			Total
ESPA 15 E&T	50,708.15	45,906.39	4,801.76		50,708.15		100%		NYOHA	0.321 \$ 14,300.84	\$ 93,811.51
ESPA 16 E&T	47,965.87	469.86	43,697.42	3,780.00	47,947.28	18.59	100%		OHILI	0.279 \$ 12,429.70	\$ 81,537.10
ESPA 17 E&T	44,532.31					44,532.31	100%		Hudson	0.148 \$ 6,593.53	\$ 43,252.66
							0%	R and D	UNYEA	0.252 \$ 11,226.83	\$ 73,646.42
TOTAL ESPA E&T	169,152.81	72,322.73	48,499.18	3,780.00	124,601.91	44,550.90	0%				
							74%				
							0%				
ESPA 14 R&D	5,156.03		5,156.03		5,156.03		100%	EE	NYOHA	0.321 \$ 11,865.17	
ESPA 15 R&D	15,312.33					15,312.33	0%		OHILI	0.279 \$ 10,312.72	
ESPA 16 R&D	11,430.97					11,430.97	0%		Hudson	0.148 \$ 5,470.55	
ESPA 17 R&D	10,219.85					10,219.85	0%		UNYEA	0.252 \$ 9,314.71	
							0%	Rebate			
TOTAL ESPA R&D	42,119.18		5,156.03		5,156.03	36,963.15	12%				
							0%				
							0%				
ESPA 14 EE	14,012.76					14,012.76	0%		NYOHA	0.321 \$ 28,310.90	
ESPA 15 EE	26,396.00					26,396.00	0%		OHILI	0.279 \$ 24,606.67	
ESPA 16 EE	25,200.77					25,200.77	0%		Hudson	0.148 \$ 13,053.00	
ESPA 17 EE	22,586.41					22,586.41	0%		UNYEA	0.252 \$ 22,225.38	
							0%				
TOTAL ESPA EE	88,195.94					88,195.94	0%				
							0%				
							0%				
ESPA 14 REBATE	18,856.94		5,993.55		5,993.55	12,863.39	32%		NYOHA	0.321 \$ 39,334.60	
ESPA 15 REBATE	36,592.94					36,592.94	0%		OHILI	0.279 \$ 34,188.02	
ESPA 16 REBATE	39,798.84					39,798.84	0%		Hudson	0.148 \$ 18,135.58	
ESPA 17 REBATE	33,282.52					33,282.52	0%		UNYEA	0.252 \$ 30,879.50	
							0%				
TOTAL ESPA REBATE	128,531.24		5,993.55		5,993.55	122,537.69	5%				

# NORA Gold Hydronics

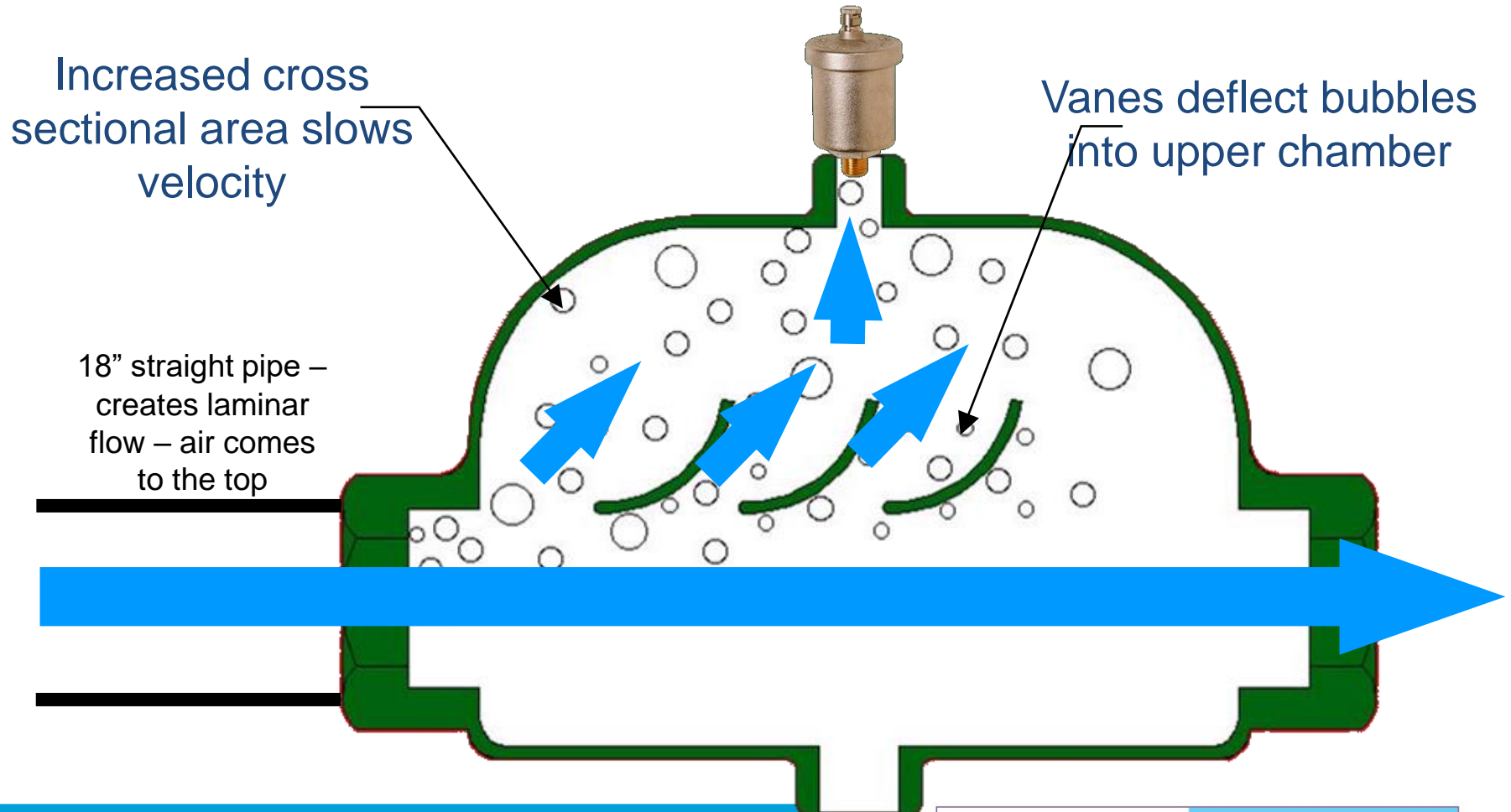
## Online Course

# Pressure Relief Valve

- Protects the boiler.
- Set at 30 psi.
- Opens/weeps at about 27 psi.
- MUST meet or exceed boiler rating.



# How Does It Work?



# Air Separator

**SPIROTHERM**

**spirovent®**  
AIR ELIMINATION UNIT

*A mixture of air and water enters the vessel*



COPYRIGHT 2002, SPIROTHERM, INC.





# Heat Loss

## ☐ Air infiltration

- Warm air leaks out
- Cold air leaks in

## ☐ Conductive loss

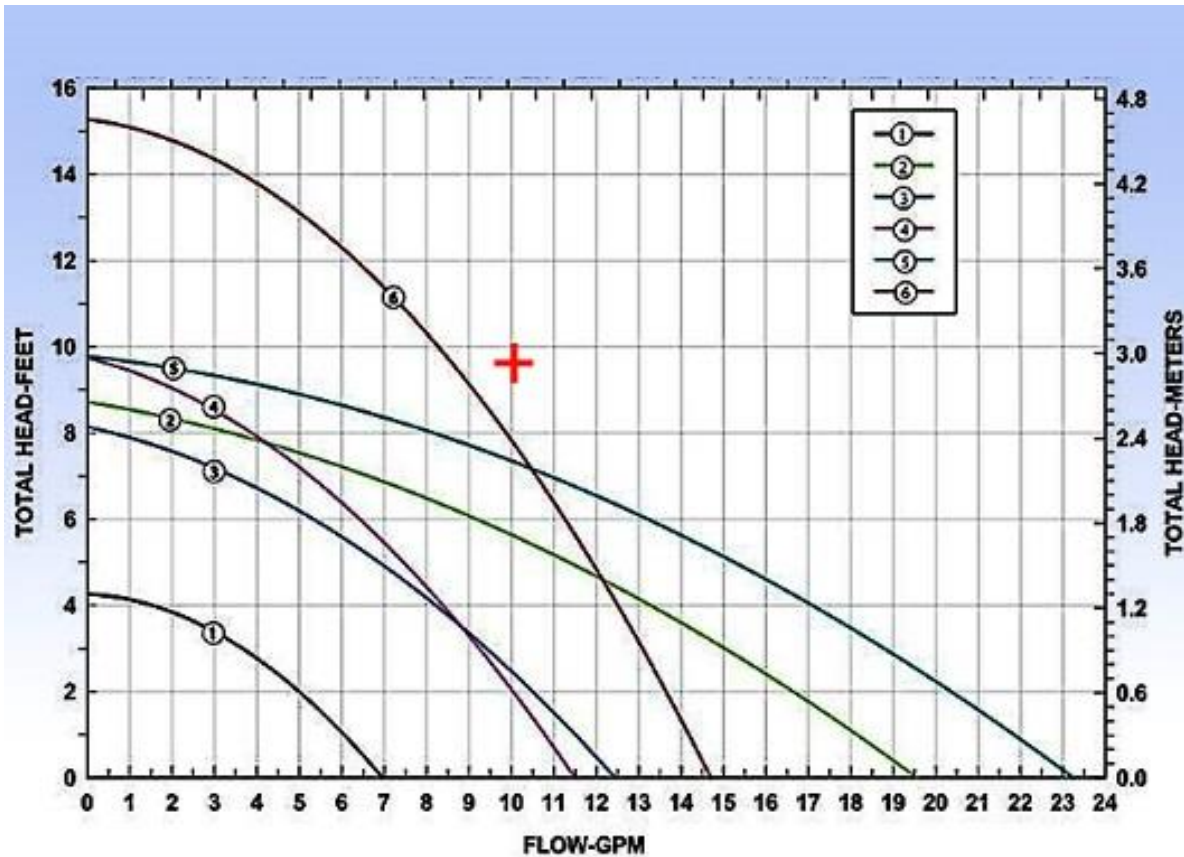
(Heat transmission)

- Walls, ceilings, floors
- Doors, windows, etc.
- Room by room
- Video



# Sizing Circulators For Indirects

10 GPM and 9.7 feet of head



# Congratulations!

You have completed the course.

# Manufacturer online CEUs

- Honeywell
- Carlin
- Beckett
- Taco
- Energy Kinetics
- Westwood
- Caleffi

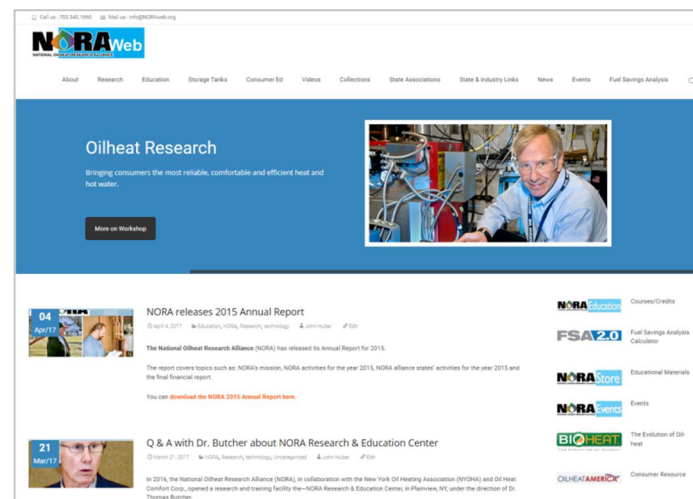
# NORA Communications

NORAweb.org  
Learning.NORAweb.org  
Press Releases  
Articles

# NORAweb.org

**4,200 visitors/month (avg.)**

- News
- Rebate forms
- Events
- Technical Reports
- Education materials
  - Silver Manual downloaded over 900 times since Nov.
- State activities



# Learning.NORAweb.org

## Education portal

- New course announcements
- Source for education materials
- Connect with techs

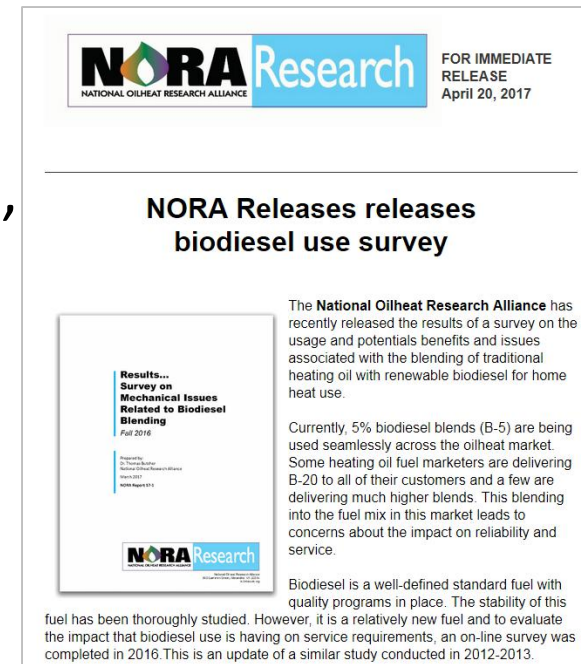




# Press Releases

## Two per month (avg.)

- Seen more than 10,500 times (2017)
- Industry personnel, press, trade press, association execs
- Include:
  - Technical bulletins and reports
  - Interviews
  - Education updates



# Articles

## Create or assist in articles on NORA and/or oilheat

R & D

### 10 questions with Dr. Tom Butcher, NORA An overview of the new NORA lab



Butcher

In 2016, the National Oilheat Research Alliance (NORA), in collaboration with the New York Oil Heating Association (NYOHA) and Oil Heat Comfort Corp. opened a research and training facility the—NORA Research & Education Center, in Plainville, NY, under the direction of Dr. Thomas Butcher.

ICM's Publisher, Don Farrell, spoke to Dr. Butcher about the lab, its funding, its staffing, its projects and its goals.

**Don Farrell:** What is the official name of the research center and what is its mission?

**Tom Butcher:** The official name is NORA Research & Education Center. The mission of the research part is to support the development of advanced technologies that lead to improved efficiency, increased integration of renewable fuels and enhanced reliability of liquid fuels heating systems. Liquid fuels are traditional petroleum-based fuels and also biofuels such as biodiesel and other wood-derived liquid fuels.

**DF:** Why choose Long Island for the location?

**TB:** Long Island, NY is an area that's very strong for heating oil, which is important. Many stakeholders and local industry people who really care come frequently, which is fantastic in helping with the lab. The access to transportation is great, between major highways and air travel. In addition, it's close to major universities, and of course, Brookhaven National Laboratories, with whom we have had the opportunity to collaborate.

**DF:** Oil Heat Comfort Corp. and New York Oil Heating Association (NYOHA) are two stakeholders as well, correct?

**TB:** Right, but their involvement is more in the technical training/education functions.

**DF:** How is this lab funded?

**TB:** NORA has a mandate in its statute that a minimum of 30% of its budget is spent on Research and Demonstration, this is a major source of funds. Additionally, the New York State Energy Research & Development Authority (NYSEDA) is also providing funds for specific projects now and certainly we're hoping to make that a continuing part of this. NORA mostly funds the day-to-day operations while NYSEDA cooperates by funding projects.

**DF:** What about when you collaborate on joint projects with manufacturers?

**TB:** We are not opposed to the idea of some funds coming in from manufacturers. What could work is that manufacturers could go to a third party—like Department of Energy (DOE) or somebody else—with a package proposal with some funds for the NORA lab, which would then come through the company. Certainly, it could make a lot of sense for the NORA lab to cooperate with manufacturers on research projects as part of a team, in which case the funding would be external—it could be a company or a third party.

**DF:** Who staffs the research center?

**TB:** It is staffed by me and two interns from Stony Brook University. I have a PhD in research engineering with well over 30 years of experience in combustion research.

Jonathan McCutcheon, who goes by the name of 'Mike', is a senior, graduating in May, from the Chemical Engineering program at Stony Brook University. He has a great deal of experience in the biofuels lab at Stony Brook, which is we consider to be a partner institution for us. He has a lot of personal interest and experience with biofuels—he's very strong with analytical techniques for biofuel characterization. He will graduate with a Bachelor's in Chemical Engineering.

Brian Gainey is a Mechanical Engineer. He is also going to graduate from Stony Brook University in May. He works very closely with the engines combustion lab at the Advanced Energy Research & Technology Center at Stony Brook. We have a very good working relationship with that team as