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NORA early R&D priorities released

Brookhaven National Laboratory (BNL), long a place of research and innovation, was the ideal location for the National Oilheat Research Alliance (NORA) to kick-off a new era of research and development (R&D). NORA held its first R&D Conference/Workshop since congressional re-authorization at the renowned venue on June 3–4.

The current NORA statute requires NORA to allocate no less than 30% of its annual budget (\$3-4 million per annum, \$15-\$20 million over five years) to R&D of new oilheat products, systems and solutions to benefit the seven million homes and businesses using heating oil for space heating and hot water. How to best spend this money was the focal point of the event.

Participating in the Conference/Workshop were a mix of oilheating marketers, installers, technical experts, manufacturers and other interested parties. The research had an expanded vision, including core research; understanding our product and how it compares to competitors; improvements; working to make Bioheat® fuel an option; and transitioning and facilitating energy efficient equipment and practices.

Over the two days, participants received updates of the current state of R&D. Following this, the group was divided into smaller “working groups” where specific ideas and directions for future R&D were brainstormed and subsequently presented to the conference as a whole for discussion and weighting.

Research Topic Prioritization

Biofuels/Bioheat® fuel received the most votes from participants (27%), with the top priorities within Biofuels/Bioheat® fuel scoring a tie between Technical/Climate Change Information Getting to State Energy Offices/stakeholders (25%) and Addressing Biofuels/Bioheat® fuel myths with Technical Data Sheets and Handouts for Stakeholders.

Other research topics getting top consideration were Field Demonstration/ Documentation (19%); Low Cost/High Efficiency Appliances (18%); Controls & Emerging Technologies (14%); Combustion/ Advanced Burners (11%); and Fuel Quality (11%).

NORA Research Management

The next step of the Research Committee is to issue a Program Opportunity Notice (PON) for soliciting projects. The first NORA PON will be issued in September 2014. There will also be an Annual Research Conference; the time and place have yet to be determined.

Research & Development funds will be allocated based upon careful review by the NORA Executive Board, Board of Directors

and the Research & Development Committee

The Conference/Workshop’s intent was to continue the process of moving oilheating technology forward and to provide maximum benefit for U.S. oilheat consumers.

Results of the workshop priorities weighting

Biofuels/Bioheat® Fuel	27%
Field Demonstration/Documentation	19%
Low Cost/High Efficiency Appliances	18%
Controls and Emerging Technologies	14%
Combustion/Advanced Burners	11%
Fuel Quality	11%

Priorities within each topic:

Biofuels/Bioheat® Fuel	Within topic Total	
1 Technical/Climate Change Info to State Energy Offices/Stakeholders	25%	5%
2 Address the Myths with: Technical Data Sheets/Handouts to Stakeholders	25%	5%
3 Technical Work for Higher ASTM Spec than 20%	20%	4%
4 Cloud Point/Coldflow Info and Specs	5%	3%
5 Target 50% by 2030, 100% by 2050	10%	2%
6 Strategic Partnerships to Develop More Oils/Fats - New Sources	3%	0%
7 Scientifically Capture Field Data over B20	3%	0%

Field Demonstration/Documentation

1 Develop Powerful Fuel Use Tracking/Savings Tools... simple to use with wide adoption goal	50%	8%
2 Develop virtual “Smart Meter” Technology for Instant Results & More Efficient Deliveries	35%	6%
3 Fuel Savings Analyzer* Upgrade	15%	2%

Low-Cost/High Efficiency Equipment

1 FSA Calculator*/NORA Stamp of Approval/IBR-Like Testing	38%	6%
2 Use High Production Gas Designed Heat Exchangers	19%	3%
3 Tankless Coil Cost Analysis Options to Improve Efficiency	13%	2%
4 Flue Gas Dilution Venting System for Near or Fully-Condensing Equipment	9%	1%
5 Oil-fired Whole House Generator	9 %	1%

Within topic Total

6	Retrofit Options: e.g. flue gas economizer, controls, etc.	6%	1%
7	Extended Service Times	3%	0%
8	Low Cost System Components	3%	0%

Combustion/Advanced Burners

1	B-100 Burner	33%	6%
2	Novel Atomization Technical Feasibility	26%	5%
3	Modulating Burners	21%	4%
4	Sensors/Diagnostic Tools	19%	4%
5	Generic Computational Fluid Dynamics Model to Assist Burner/Appliance Development	2%	0%

Controls and Emerging Technologies

1	Combustion Monitoring	41%	7%
2	Self-Powered Systems	18%	3%
3	Common Language	15%	3%
4	NORA Advanced Tech. Monitoring	15%	3%
5	Self-Learning Systems	10%	2%

Fuel Quality

1	Quick Low Cost Method to Assess Fuel Quality (including % Bio)	50%	6%
2	Best Practices Manual - Q.C. Programs, Housekeeping - Water/Contamination, I.D. Characteristics of ULSHO & Bio	29%	4%
3	Emerging Issues Assessment - Lubricity, Corrosion, ULSHO, etc.	21%	3%

Top Projects with over five Percent of total votes

1	Develop Powerful Fuel Use Tracking/Savings Tools...simple to use with wide adoption goal	8%
2	Combustion Monitoring	7%
3	B-100 Burner	6%
4	Develop virtual "Smart Meter" Technology for Instant Results & More Efficient Deliveries	6%
5	Technical/Climate Change Info to State Energy Offices/Stakeholders	5%
6	Address the Myths with: Technical Data Sheets/Handouts to: Real Estate Community, AHJs (Authority Having Jurisdiction: Fire Marshals, Inspectors, etc.), Insurance Companies, Customers, Blenders, Students, Environmental Groups	5%
7	Novel Atomization Technical Feasibility	5%