GTI’s Emerging Technology Program: NARUC Energy Efficiency Hour

February 4, 2013

Ryan Kerr, Emerging Technologies Manager
Gas Technology Institute
E: ryan.kerr@gastechnology.org
P: 224.735.0264
GTI Overview

> Not-for-profit RD&D organization with 70 year history
> RD&D largely supported by rate payers and tax payers

> Facilities
  - 18 acre campus near Chicago
  - 200,000 ft², 28 specialized labs
  - Other sites in Alabama, D.C, Texas Massachusetts, California

> Staff of 250
  - 170 engineers, scientists covering all fields
Natural Gas Industry Collaboration
Emerging Technology Program

> Gas Technology Institute led, utility supported, North American collaborative targeting residential, commercial and industrial solutions

> ETP’s principle goal is to accelerate the market acceptance of emerging gas technologies

2013 Members Listed Above
What’s Driving ETP?

> Significantly growing and maturing gas programs across U.S.
> Bigger budgets, bigger savings goals
> Low gas prices making efficiency less desirable and cost-effective (e.g. TRC)
ETP Scope & Direction

**ETP Mission**
Accelerate the market acceptance of energy efficient gas technologies

**ETP Activities**
Identify and demonstrate technologies to **(1) collect and analyze** enabling program and technical data while **(2) developing marketplace** through consumer awareness and **infrastructure** improvement.

**ETP Results**
As gas programs, regulations, and markets mature, low hanging fruit disappears. ETP helps **deliver a pipeline of new technologies** and program solutions enabling utilities to meet tomorrow’s energy efficiency goals **with less risk and more certainty**.

**Examples: Existing and New ET Program Activities**
- **California**- Roughly 2.5% of total IOU EE and DSM budgets under 2010-2012 Portfolios
- **New York**- (NYSERDA) Roughly 5% of total program budget
- **Pacific Northwest** (NEEA)- 10% of total budget 2010-2014
- **Illinois**- 3% of Gas EE and DSM Program Revenue
- **Canadian ETIC**
Nicor Gas
Emerging Technology Program

> $50 million/year portfolio, 3% investment in ETP
> GTI selected to implement ETP for Nicor Gas
> Formal, transparent process for project selection

> Goal to identify and demonstrate new technologies for EEP
> Close collaboration with implementation programs
Reviewed Tech for 2012

**Residential**
1. EcoFactor
2. Combined Space and Water
3. ASE RetroSave
4. ShowerStart Roadrunner II
5. Opportunities for Residential Natural Gas Feedback
6. Micro-Combined Heat and Power
7. Integrated Design: DHW Systems
8. Radiant Heating and Cooling
9. Mantis Condensing Fireplace
10. Hybrid Gas Solar Domestic Hot Water

**Commercial**
11. High Efficiency Rooftop Units
12. D’MAND Circ for Multi-family Central HW Loops
13. Ozone Laundry
14. Boiler Controls – Greffen M2G
15. IntelliChoice Energy NextAire Multit-Zone GHP
16. Commercial Food Service Technologies
17. Rheem H2AC Integrated Air and Water RTU
18. High Efficiency Condensing Unit Heater

**Industrial**
19. Ultramizer Boiler Heat Recovery
20. Air Curtains
21. SRU Flue Gas Condenser
22. Automated Steam Trap Monitoring

ACTIVE ETP PROJECTS
ETP National Pilot
Residential HE Combo Systems

- 94 EF condensing tankless water heater + hydronic air handler (Rheem pictured)
  - Improves utility/customer value proposition for water heating by piggy-backing on larger space heating load
- Multi-unit demonstrations/pilots in IL, NY, and CA
  - At least 20 residencies with data acquisition systems
- Measured field performance, energy savings, cost analysis, and customer reaction
- Contractor technical/sales training, consumer messaging, rebate program pilot
Field Assessments
High Efficiency Gas PACs- RTUs

- Collaboration with NREL, DOE, manufacturers, national accounts, and utilities
- Large-scale monitoring shows diverse runtimes for RTUs and more therm use than energy models suggested
- Dedicated outside air systems (DOAS) provide high efficiency market entry point application
  - “big box” retail accounts with established DOAS vendors
  - high heating degree day (HDD)/heating load locations
  - 24/7 retail stores
- Retail partner projected $4,400 premium, = 4.1 years ROI @ 90%TE
- Northern climates see more than 3,000 therms/saved per year per unit!
Comments, Questions

Ryan Kerr
Emerging Technologies Manager, End Use Solutions
Gas Technology Institute
1700 S Mount Prospect Road
Des Plaines, IL 60018
Email: ryan.kerr@gastechnology.org
Phone: 847.768.0941
Mobile: 224.735.0264
Website: www.gastechnology.org/ETP

Effective Industry Collaboration
Collaborative ETP initiatives provide an opportunity for companies to share insights, leverage energy efficiency funds and help increase the transfer of technology between upstream innovators and the marketplace.

ETP also offers access to GTI services and capabilities for energy efficiency program planning, implementation and assessment. GTI and its partners can work with your company to tailor or modify initiatives to address company or regionally specific needs and opportunities. We can also support a regulatory submission for ETP authorization. GTI has a long history of working collaboratively with utility companies, regulatory agencies, local state/federal government, non-government organizations, manufacturers, channel partners, trade allies and other stakeholders to reduce the time and cost of getting new technology to market.

Emerging Technology Program (ETP)
A newly established collaborative program managed by Gas Technology Institute (GTI) — is focused on accelerating the commercialization and adoption of the latest energy efficient technologies. The program is designed to help companies identify and evaluate the most promising products and integrated solutions and assess their suitability for future use in utility energy efficiency programs.

GTI’s industry-leading expertise provides the information and resources required to help advance market acceptance of emerging technologies for near- to mid-term implementation. ETP strives to create market pull by deployment of natural gas solutions at a desired scale, reacting to self-sustaining commercial viability and impact.

ETP activities are “Beyond development” stage: Field Testing, Demonstration, and Deployment — a focused effort to ensure market acceptance of next-generation emerging technologies.