



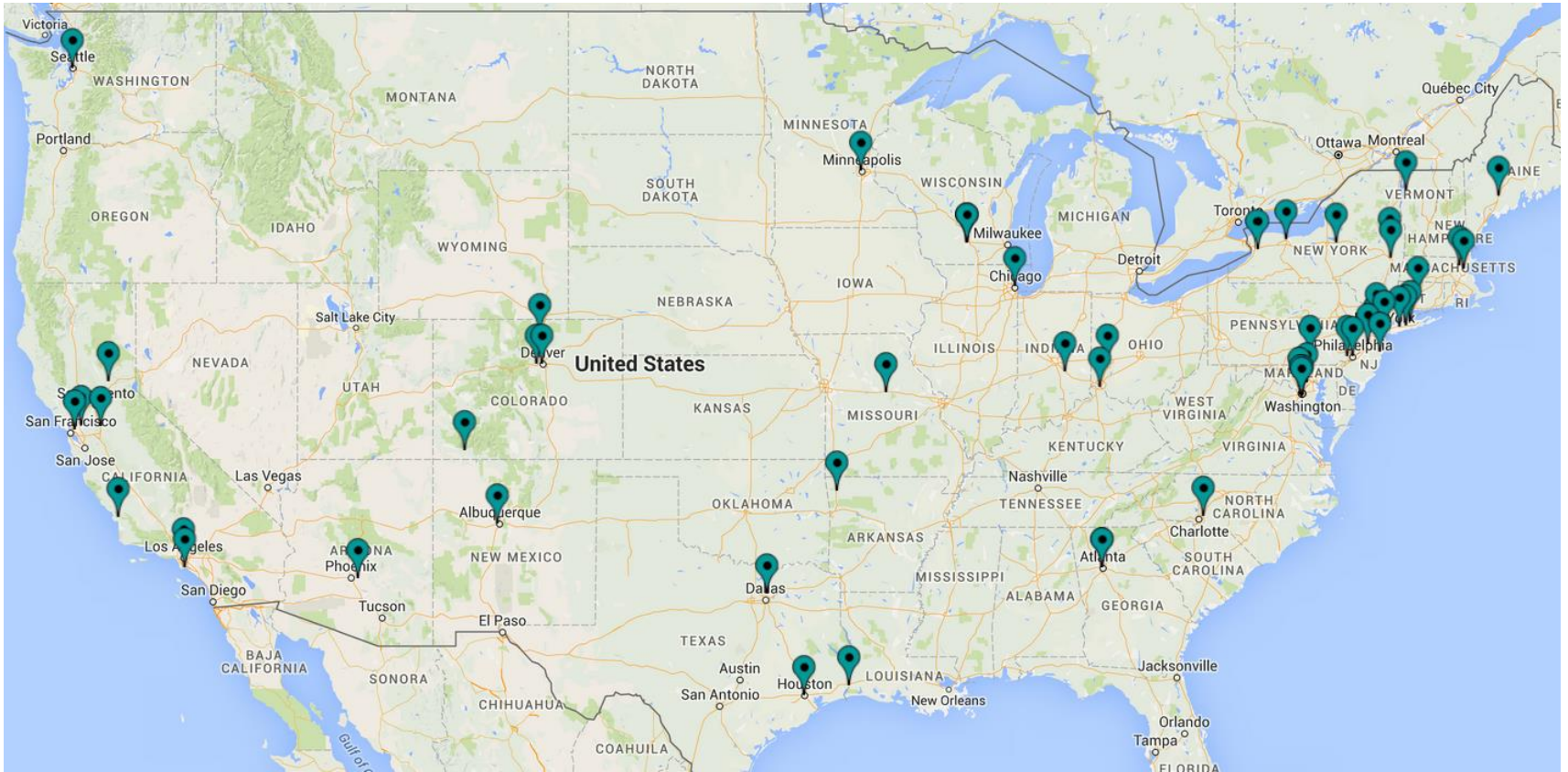
Better Buildings Residential Network Peer Exchange Call Series:

**Home Upgrades: Leveraging HVAC Upgrades for
Greater Impact (201)**

Call Slides and Discussion Summary

November 18, 2015

Call Attendee Locations



Call Participants: Residential Network Members

- City & County of Denver, Colorado
- Columbia Water and Light
- Efficiency Maine
- Energy Efficiency Specialists, LLC
- Focus on Energy
- Greater Cincinnati Energy Alliance
- Home Energy Magazine
- Honeywell International, Inc.
- International Center for Appropriate & Sustainable Technology
- Midwest Energy Efficiency Alliance
- New York State Energy Research & Development Authority
- Southface Energy Institute
- Vermont Energy Investment Corporation
- Wisconsin Energy Conservation Corporation

Call Participants: Non-Network Members

- AAA Energy Audits
- Air Conditioning Contractors of America
- AEP Southwestern Electric Power Company
- AppleBlossom Energy Inc.
- BKi
- BlueGreen Alliance
- Building Performance Institute
- Brooklyn Green Home Solutions, Inc.
- Cann Geothermal Plus
- Capital Heat, Inc.
- Consortium for Energy Efficiency
- CLEAResult
- Collaborative Efficiency
- Comfort Institute
- Convenient Home Services, Inc.
- DLSD Homes
- Eco Performance Builders
- Ecobeco
- Energy Analysis Group
- Energy Response Corps
- Eversource
- Fujitsu General America
- greeNEWit
- GreenSeal Weatherization
- Johnson Air Conditioning
- Lennox Industries
- LINC Housing
- La Plata Electric Association
- North American Insulation Manufacturers Association
- Northeast Energy Efficiency Partnerships
- National Renewable Energy Laboratory
- Orange Energy Solutions
- Patel Builders, Inc.
- PG&E Energy Training Center
- Philadelphia Gas Works
- Princeton Air
- PSEG Long Island
- Ryan Taylor Architects, LLC.
- San Luis Obispo County Planning & Building Dep't. Energy Division
- The Brendle Group
- U.S. EPA

Agenda

- Agenda Review and Residential Network Overview
- Opening Poll
- Overview: Home Improvement Catalyst, Steve Dunn, U.S. DOE
- Featured Speakers—Contractor Role and Perspectives:
 - Mike Rogers, OmStout (*Network Member*)
 - Brian Bovio, Bovio Advanced Comfort & Energy Solutions
 - Keith O'Hara, EcoPerformance Builders
 - Rob Minnick, Minnick's Inc.
- Featured Speaker—Upstream Strategies:
 - Jake Marin, Vermont Energy Investment Corporation (*Network Member*)
- Q&A and Discussion
- Closing Poll and Upcoming Call Schedule

Better Buildings Residential Network

Better Buildings Residential Network: Connects energy efficiency programs and partners to share best practices and learn from one another to increase the number of homes that are energy efficient.

Membership: Open to organizations committed to accelerating the pace of home energy upgrades.

Benefits:

- Peer Exchange Calls 4x/month
- Tools, templates, & resources
- Recognition in media, materials
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- Residential Program Solution Center guided tours

Commitment: Provide DOE with annual number of residential upgrades, and information about associated benefits.

For more information or to join, email bbresidentialnetwork@ee.doe.gov

Opening Poll

- Which best describes your role/affiliation?
 - Energy efficiency program administration – **43%**
 - Other (please chat in) – **22%**
 - HVAC contractor or trade – **15%**
 - Other contractor or trade – **13%**
 - Utility – **7%**

Steve Dunn, U.S. Department of Energy

Home Improvement Catalyst

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Better Buildings Residential Peer Exchange Call

November 18th, 2015

Steve Dunn

Building Technologies Office

DOE Residential Buildings Integration Ecosystem



Home Improvement Catalyst

Our Focus: capturing greater energy efficiency and value through actions homeowners are **already taking or plan to take** through strategies and tactics that **minimize disrupting the normal course of business** within and across trades

Through the Home Improvement Catalyst, DOE seeks to:

- Offer **tools and resources** to accelerate adoption and market acceptance of **high impact technologies** to achieve **better performance** (comfort, health, durability and value)
- Develop and **demonstrate concepts** for **mid-stream and up-stream** interventions that accelerate incremental installation of market ready measures (single and in combination)
- Create **messaging and guidance** to enable **consumer pathways** for achieving greater energy savings over time

Significant Market Opportunity for Energy Efficiency

5 million
home sales per year



9 out of 10
U.S. homes have
inadequate insulation

\$150 Billion
home improvement market



3 million
HVAC replacements
annually



Sources:

¹ National Association of Realtors (NAR). Existing homes sales. 2015.

<http://www.realtor.org/topics/existing-home-sales>

² Harvard Joint Center for Housing Studies, 2013. The U.S. Housing Stock: Ready for Renewal. Appendix A-1.

<http://www.jchs.harvard.edu/research/publications/us-housing-stock-ready-renewal>

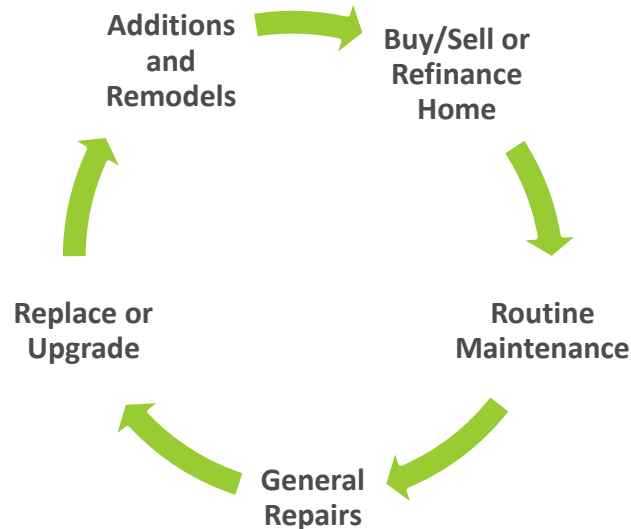
³ North American Insulation Manufacturers Association (NAIMA)

<http://www.naima.org/insulation-news/article.php?storyid=124>

Aligning Energy Savings Opportunities with Home Improvement Transactions

Home Upgrade Opportunities (illustrative)	Buy House	Maintenance	Replace/ Upgrade	Remodel	Refinance	Potential Energy Savings
Lighting and Appliances	●	●	●	●		-4%
Seal, insulate, ventilate	●		●	●	●	-10%
Heating, Cooling Systems and Distribution (duct ins. + seal)	●	●	●	●	●	-15%
Domestic Hot Water Systems (gas tankless, HPwH)		●	●			-3% - 5%
MEL's, Controls, Connected Home		●		●		-3 - 5%
On-site Renewable Generation				●	●	Up to Net Zero

The home ownership life cycle offers multiple touch points involving purchasing decisions with opportunities to promote incremental energy savings



Cumulative energy savings potential of 30-40% over time

Home Improvement Catalyst: Activity Areas

Accelerate adoption of advanced technologies

Technology snapshot series to boost sales within existing business models

- Cold climate heat pumps
- Smart thermostats
- Other BTO-sponsored technologies

Field implementation support for advanced HVAC system design and installation

- Savings potential
- Messaging
- Checklists

Sequencing and packaging upgrades

Recommendations to fit with current business models

- Sequencing measures
- Trades-based measure packages based

Test pathways that leverage HVAC and other home improvement transactions

EE Program Support Resources

Capture and document best practices in program approaches

- Leveraging homeowner home improvement transactions
- Engaging upstream market actors

Document the value proposition for HVAC supply chain

- Brand & Reputation
- Technical Capabilities
- Business Processes
- Financial Impact
- Marketing & Sales

For More Information

Questions?

Steve Dunn, Project Manager

DOE Building Technologies Office

t: 720.356.1527

Caroline Hazard, SRA International

t:240.514.2656

Mike Rogers, OmStout

November 2015

Missed Opportunities Leveraging the HVAC Transaction

Mike Rogers
OmStout Consulting
Twitter: @EnerGMatters

© OmStout Consulting. 2014.

100,000 visits per day!!

What if we could turn some of those visits into deeper efficiency retrofit opportunities?

We can!

home performance

/hōm pər'fôrməns/

home performance (or building performance) is a comprehensive whole-**house** approach to identifying and fixing comfort and energy efficiency problems in a **home**.

In other words...

...home performance is about
Heating, **V**entilating, and **A**ir-
Conditioning homes



Credit: Colin McCollough, Princeton Air





Credit: Colin McCollough, Princeton Air

Good News: This Makes Sense for HVAC Contractors

- ① Higher revenue, higher margins!
- ① *Higher profits!*
- ① Opportunity to capture the flag!
- ① Better differentiation from competition!
- ① Higher customer satisfaction – *Happy Customers!*
- ① Lower seasonality & fewer callbacks!

Heard at a recent industry forum:

*“We don’t get
enough leads for
home performance”*

Two HUGE Missed Opportunities for HVAC Contractors

The
Furnace Lead

The
Service/Maintenance
Visit

*Few people call for
“home performance”*

**But every furnace call
(or A/C call, or heat pump call, or...)
is a home performance**

Service Techs in Homes

“Staged” Opportunity

- In 20-25 homes per week.
- Those customers:
 - Have already invited us in
 - Have already indicated they trust us to do work
 - Have many problems in their homes
 - Don't have to be ready today—we'll be back!



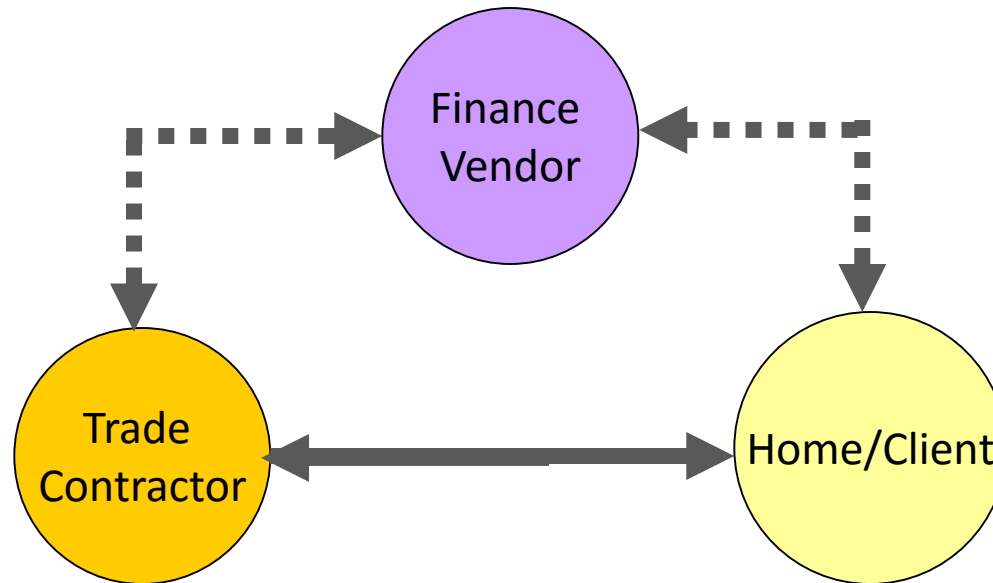
Credit: Colin McCollough, Princeton Air

Caveats:

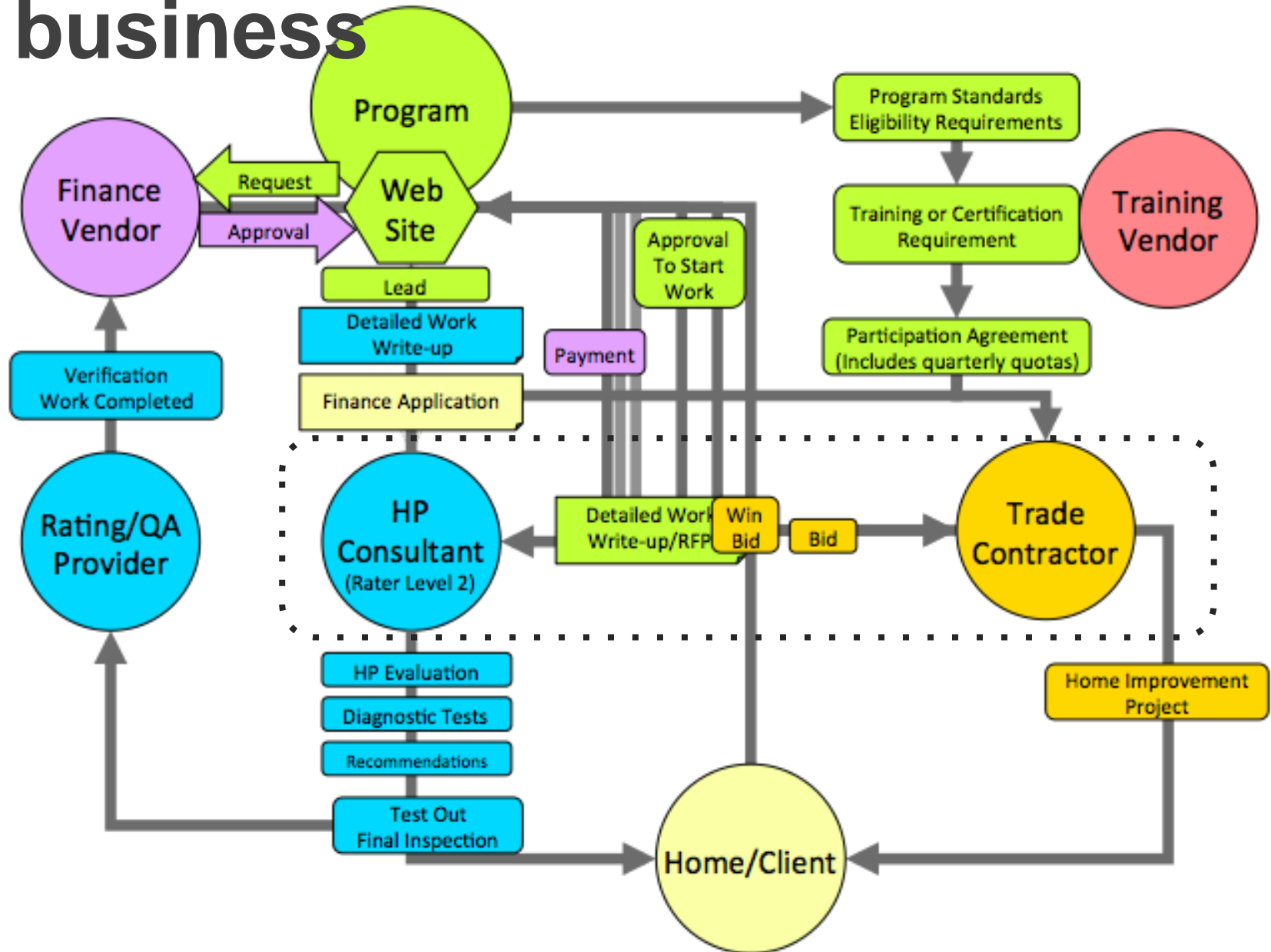
- Only Top 10% (But that's still a lot!)
 - Quality
 - Customer Service
 - Infrastructure
- Programs have to make *business* sense for the contractor
- (Contractors need access to the right products, especially at emergency replacement.)



How our business works



How we're asked to change our business



\$100,000

A REASONABLE “ALL-IN” COST TO MOVE INTO HOME PERFORMANCE

Training (all staff)
Certifications?
Equipment
Vehicles

Salaries (during training!)
Sweat Equity
Initial Marketing
Campaign
Etcetera, Etcetera

\$100,000

Can a contractor reasonably hope to recover even that initial investment? At what return?
At what risk?

That \$100K is just start-up costs! Contractor may need much more, especially if program payments are slow and receivables age!

Don't miss the opportunity

Work with HVAC contractors
to turn “everyday” into savings.

Thank you!

Questions?

Mike Rogers
OmStout Consulting
<http://omstout.com>

twitter: @EnerGMatters



Drop me a line if
you'd like to read
more on HVAC-2-HP

Presentation Highlights: OmStout

- HVAC contractors have a tremendous opportunity to deliver whole-house performance to customers.
- Home performance makes good business sense for contractors, helping differentiate them from the competition and addressing seasonality issues.
- Customers who may not call for home performance upgrades will call for a new furnace. Contractors can market efficiency upgrades to homeowners through targeted conversations.
- Programs must minimize cost and paperwork barriers for contractors to participate.

Brian Bovio, Bovio Advanced Comfort &
Energy Solutions

Keith O'Hara, EcoPerformance Builders

Rob Minnick, Minnick's Inc.

Presentation Highlights: Contractors

- Moving from HVAC into home performance is great for customers, as homes become comfortable.
- Customers call contractors for HVAC fixes; that is an opportunity to inform them of other ways to address their problems and improve their home' comfort.
- HVAC contractors can fairly easily learn the fundamentals of home performance and take on those projects.
- Programs should not lower quality standards to bring in HVAC contractors; the new contractors should meet higher standards.
- Contractors should look at the whole house as one system, to improve overall comfort instead of approaching the problem just through heating and cooling systems.

Presentation Highlights: Contractors

- Sales skills are essential. Some contractors can close a sale on the first home visit, which requires a practiced approach.
- Contractors should avoid jargon and have clear, simple conversations when explaining home performance to homeowners.
- Programs can help contractors by offering training, and by streamlining cash flow for them.
- Technical training to do high-quality home evaluations is an essential threshold for contractors who move into the home performance market.

Jake Marin, Vermont Energy Investment Corporation

HVACR Upstream

Benefits

Timeline

Supply
Channel

What is
Upstream?

What is an *Upstream* program?

Rebate paid to distributor at wholesale level;
Buy-down of efficient equipment at
distributor's *point of sale*

Distributor sells efficient equipment to
Contractor or *End-User w/ an
Instant Rebate* - new, lower price

Pass-thru of rebate to end-user

Manufacturer



Manufacturer
Rep.



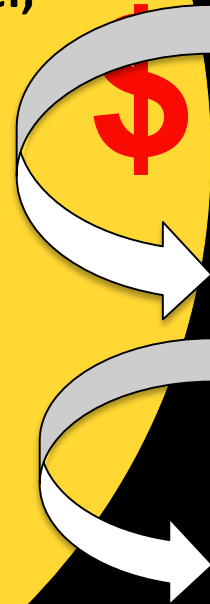
Distributor



Contractor



End-User



Benefits of Upstream

1. Promotes increased **availability, sales & installation** of efficient equipment
2. Influences distributor **stocking practices**
3. Diminishes **financial barriers** to contractors & end-users
4. Facilitates **Market Transformation**

Efficiency Vermont's HVACR Upstream Timeline

September 23, 2013

High Performance Circulator Pumps (HPCP)



June 1, 2014

Heat Pump Water Heaters (HPWH)



July 1, 2014

Expanded Circulator Pump Program



December 1, 2014

State-wide Heat Pump / mini splits / Single Zone



July 1, 2015

State-wide Heat Pump / mini splits / Multi Zone

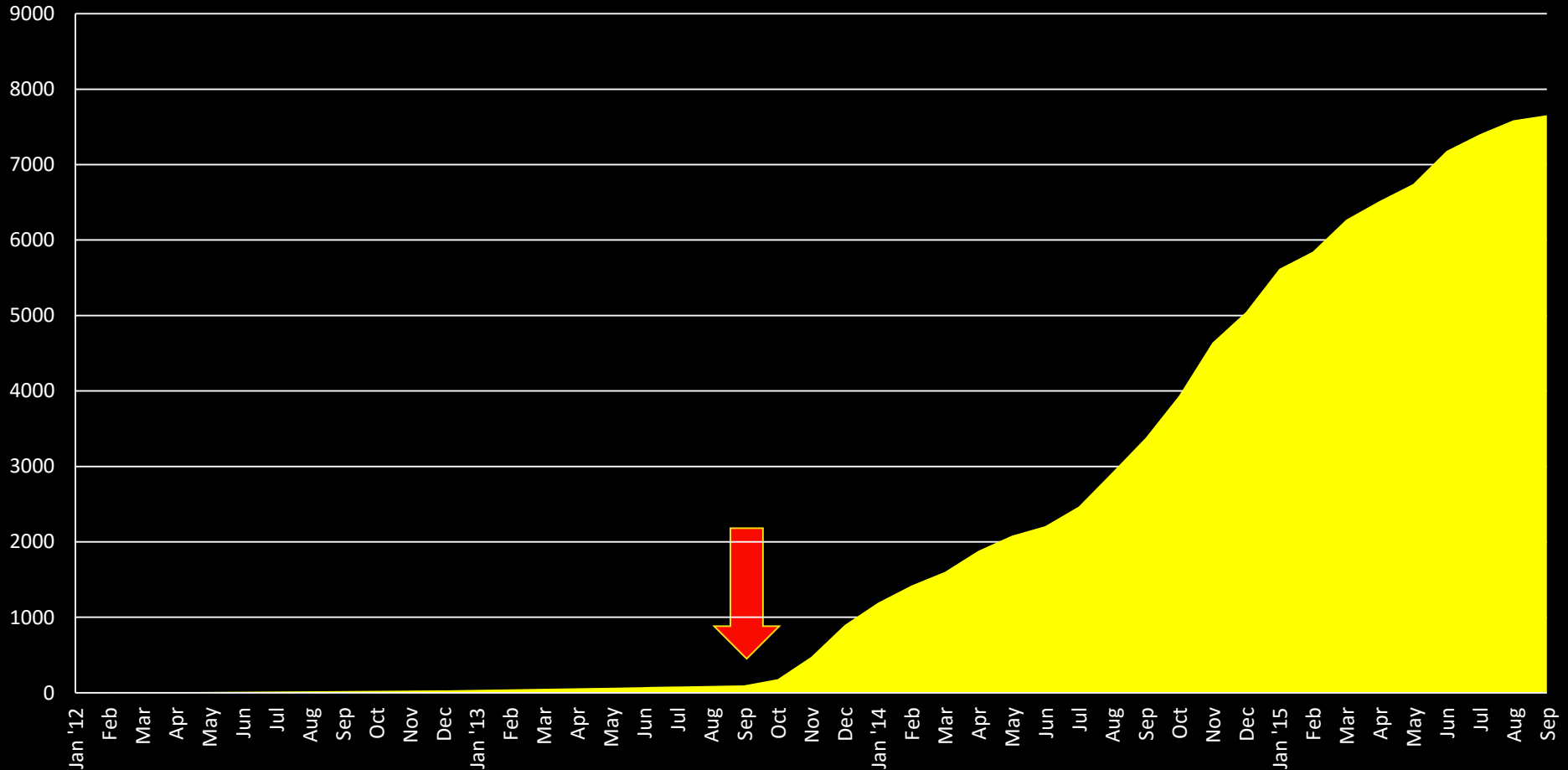
Upstream Sales Submission Process

1. Distributor sells qualifying Equipment
 - Distributor obtains minimum project information from purchaser at point of sale
2. Distributor submits sales to Efficiency Vermont on monthly basis
3. After sales verification, EVT sends reimbursement check to Distributor

Upstream Program Results

Consolidated HPCP Participating Vermont Distributors' Results

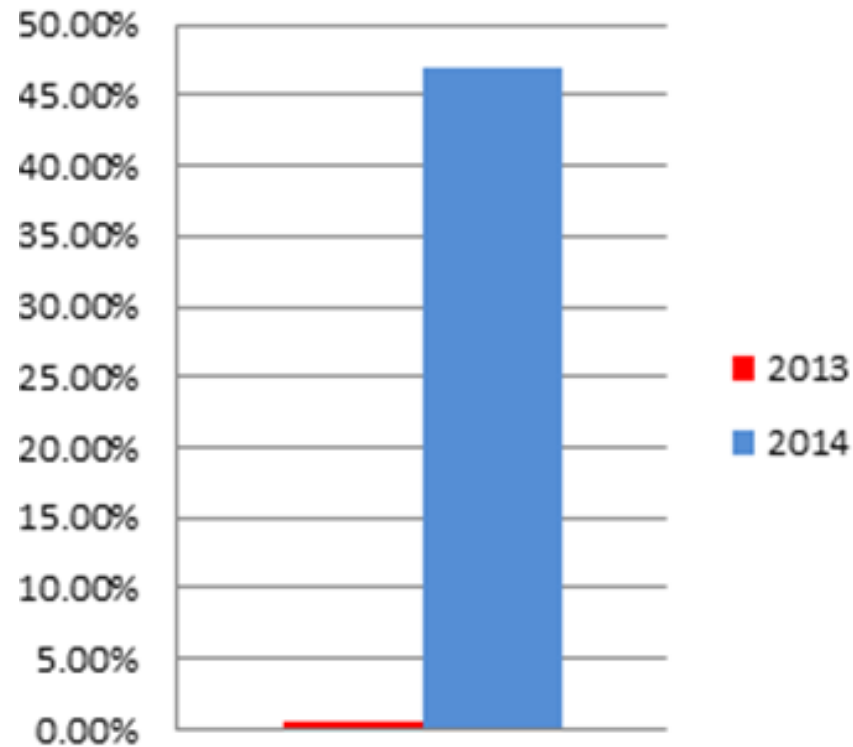
Circulator Pump Units



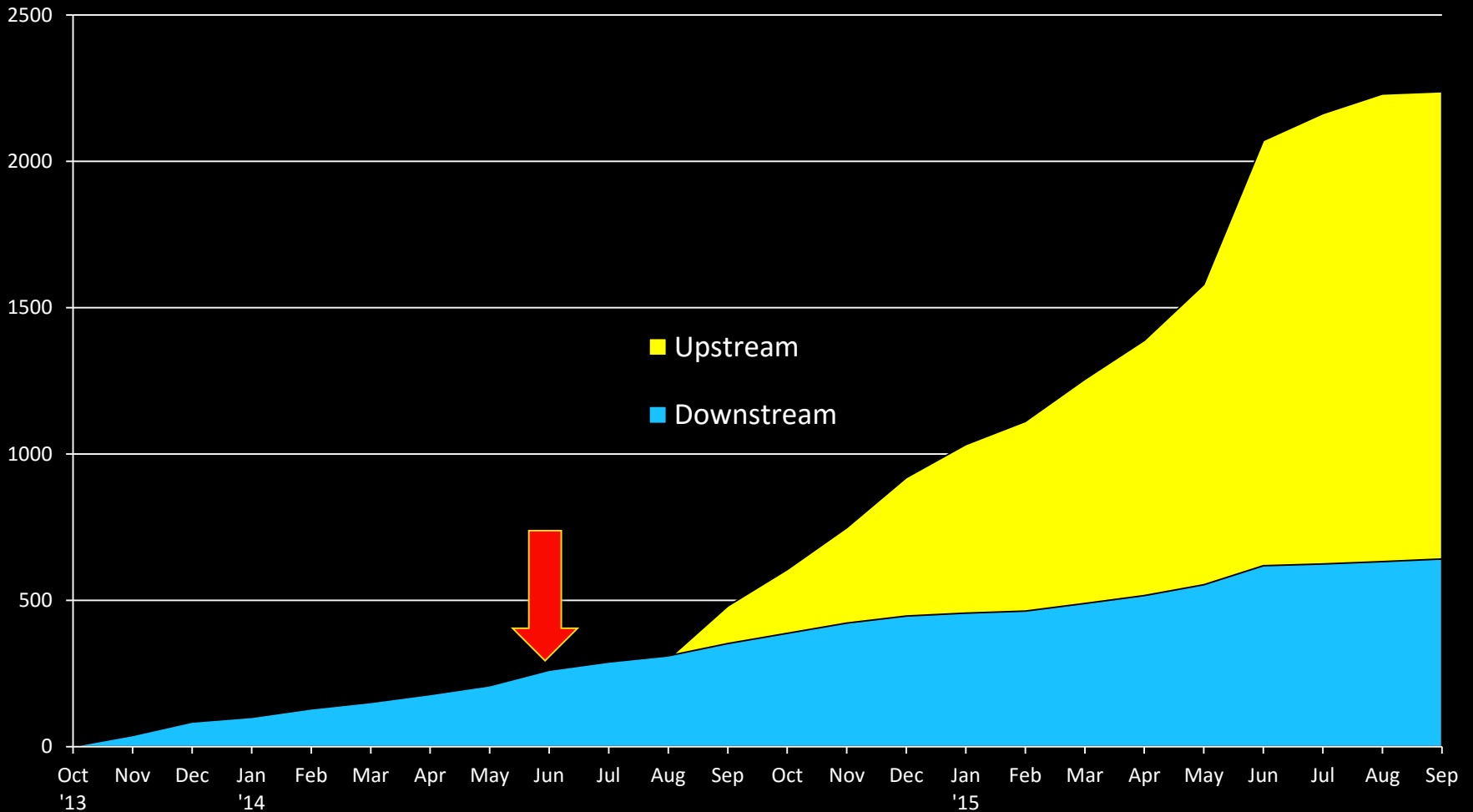
Every 2.5 Days = TOTAL ANNUAL AVERAGE before Upstream Program!!

Distributor's "Before & After" Upstream

HPCP as a % of Sales



Upstream vs. Downstream Heat Pump Water Heaters



Upstream Challenges

- Balancing Upstream as part of a portfolio
 - Potential for overlap with downstream offerings
- Customer recognition of the program involvement
 - Contractor passing through rebates?
 - Customer appreciation for utility involvement
- Data
 - Challenges getting end-use customer data from contractor
 - Optimization – when is enough, enough?

Presentation Highlights: Vermont Energy Investment Corporation

- Upstream approach to HVAC can have a major impact on the home performance market, transforming it on a large scale.
- Lowering the initial cost to contractors of high-efficiency equipment makes it an easier choice to move into home performance.
- Quality control for upstream programs can be a challenge, if there are issues with customer data. Independent contractors are contractually arranged through distributors to perform quality assurance checks.

Peer Exchange Call Series

We have started holding one Peer Exchange call every Thursday from 1:00-2:30 pm ET.

This is a change from the past call schedule.

Calls cover a range of topics, including financing & revenue, data & evaluation, business partners, multifamily housing, and marketing & outreach for all stages of program development and implementation

Upcoming calls:

- **January 14:** What Do You Want from Peer Exchange in 2016? Moving Your Ideas Out of Hibernation (201)
- **January 21:** The Energy-Water Nexus and What It Can Do for Your Residential Program (301)
- **January 28:** Where Do We Go From Here? The Changing Landscape of Residential Energy Efficiency (201)

******No calls December 17 through January 7 for a winter break. Enjoy the holidays!******

Send call topic ideas to peerexchange@rossstrategic.com

Thank you!

Please send any follow-up questions or future call topic ideas to:
peerexchange@rossstrategic.com