

Preliminary Process and Market Evaluation BBNP

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Project Team: Research Into Action, Inc., NMR Group,
Evergreen Economic Consulting, and Nexant, Inc.

Who we are

We are a team of evaluators...

independent of the BBNP program
with whom DOE has contracted

to assess the performance of BBNP
and identify lessons learned

We are:

*Research Into Action, NMR Group,
Nexant, and Evergreen Economics*

What we are doing, what we hope to learn

We are assessing the national BBNP program, not individual grantees or their programs

- *Program processes*
- *Market effects*
- *Program impacts*

Goal is to identify:

- *Program elements that are most successful in inducing market changes*
- *Sustainable business models for providing energy upgrades*

Today

We are discussing the preliminary process and market effects assessment report

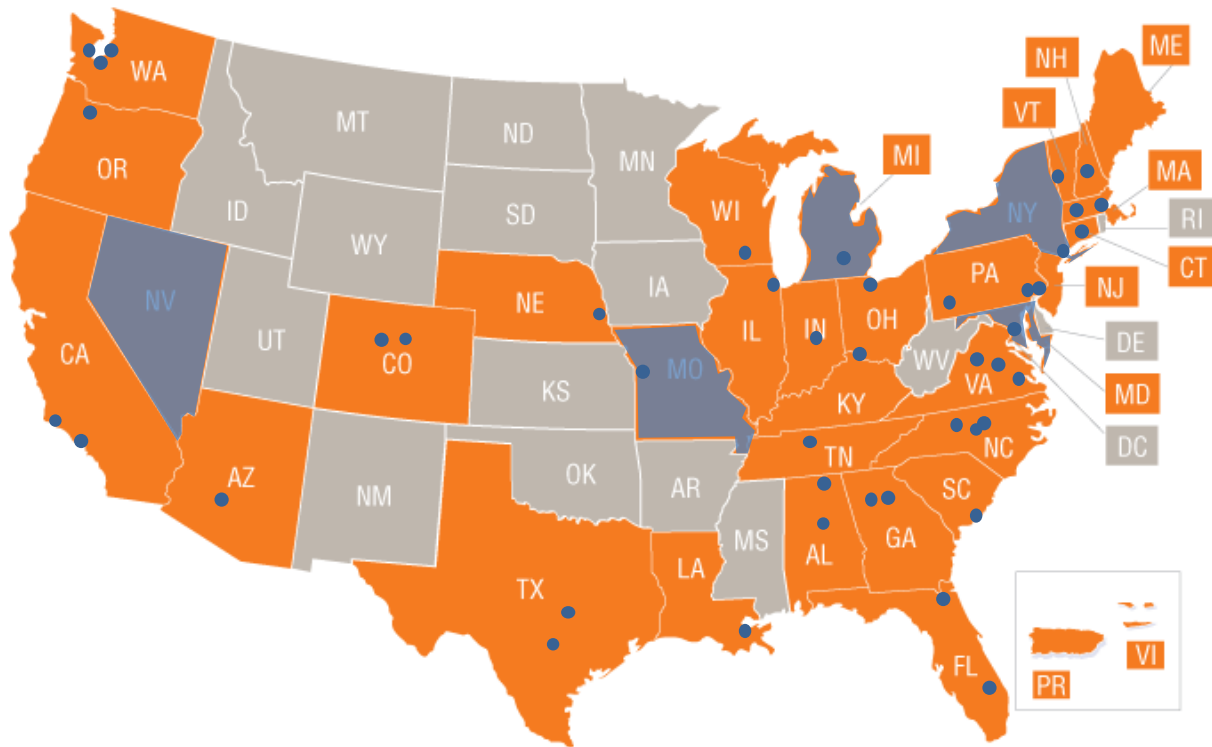
- What we learned
 - *Key findings & conclusions*
 - *Recommendations*
- How we learned it (our methods)
- Our next steps: what we will be asking of some grantees – maybe you!

Grantees and their programs: many, many differences

Differences in:

- Organizational types and prior efficiency experience
- Climate and building types served
- Services and measures offered
 - *audits, direct install, qualifying measures, rebates, grants, financing, depth of upgrades*
- Role of private sector firms in delivering program services
- Marketing methods and messages
- And much else (contractor qualifications, quality assurance activities, when programs launched...)

Grantees by Location



- City/County Level Grant
- Statewide Grant
- States With Grant Activity

Grantees Entity Type

ENTITY TYPE	COUNT (n = 41)	PERCENT
Government	30	73%
<i>City</i>	11	27%
<i>State</i>	8	20%
<i>County</i>	4	10%
<i>Regional (multi-county/multi-city)</i>	7	17%
Nonprofit	6	15%
Government-established corporations*	4	10%
Municipal Utility (city-owned)	1	2%

*Such as public benefits agencies, development agencies

Correlates of grantee success

We used statistical regression analysis to identify correlates of grantee success at mid-point of grant period (summer 2012)

- Grantee success defined by:
 - *progress toward goal*
 - *rate of conversion of audits to upgrades*
 - *average cost per upgrade completed*
 - *average cost per unit of energy saved*
- Factors most strongly correlated with success:
 - *partnerships with financing organizations*
 - *partnerships with nonprofit organizations*
 - *having energy efficiency experience*

Market effects appear to be happening

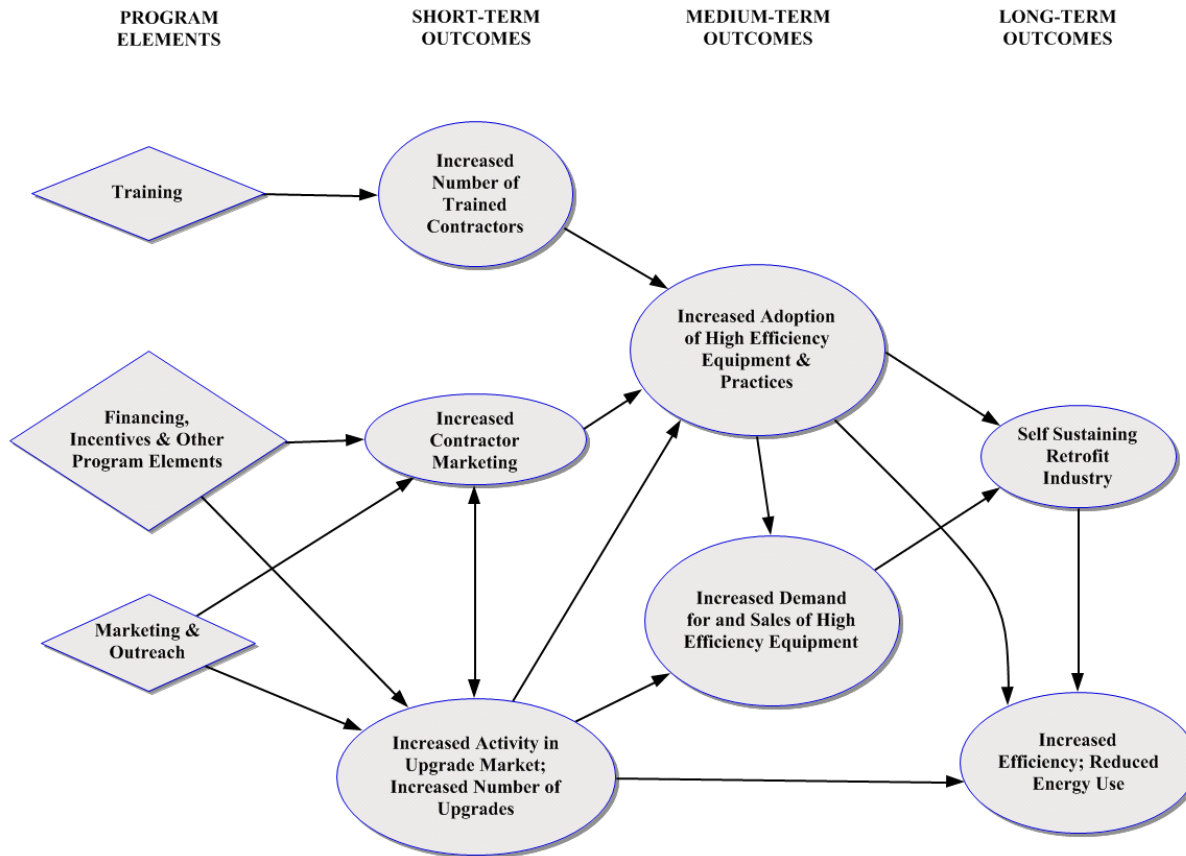
Market effects are changes in the structure of a market...

or behavior of market participants...

reflecting an increase in the adoption of EE products, services, or practices...

causally related to market interventions

Expected Market Outcomes and Links to BBNP Program Elements



Key Market Actors as Identified by Market Informants

KEY MARKET ACTOR IDENTIFIED BY MARKET INFORMANTS	ALL MARKET INFORMANTS (N = 26)	TRADE ASSOCIATION (N = 9)	REGIONAL ENERGY EFFICIENCY ORGANIZATION (N = 5)	STAKEHOLDERS (N = 12)
Contractors	16	6	3	7
Consumers	9	3	3	3
Building owners and building managers	5	3	0	2
Government agencies	5	2	2	1
Utilities	5	1	2	2
Other market actors	10	3	3	4

Market effects were suggested by the reported experiences of...

- Participating building contractors
- Nonparticipating building contractors
- Energy efficient equipment suppliers

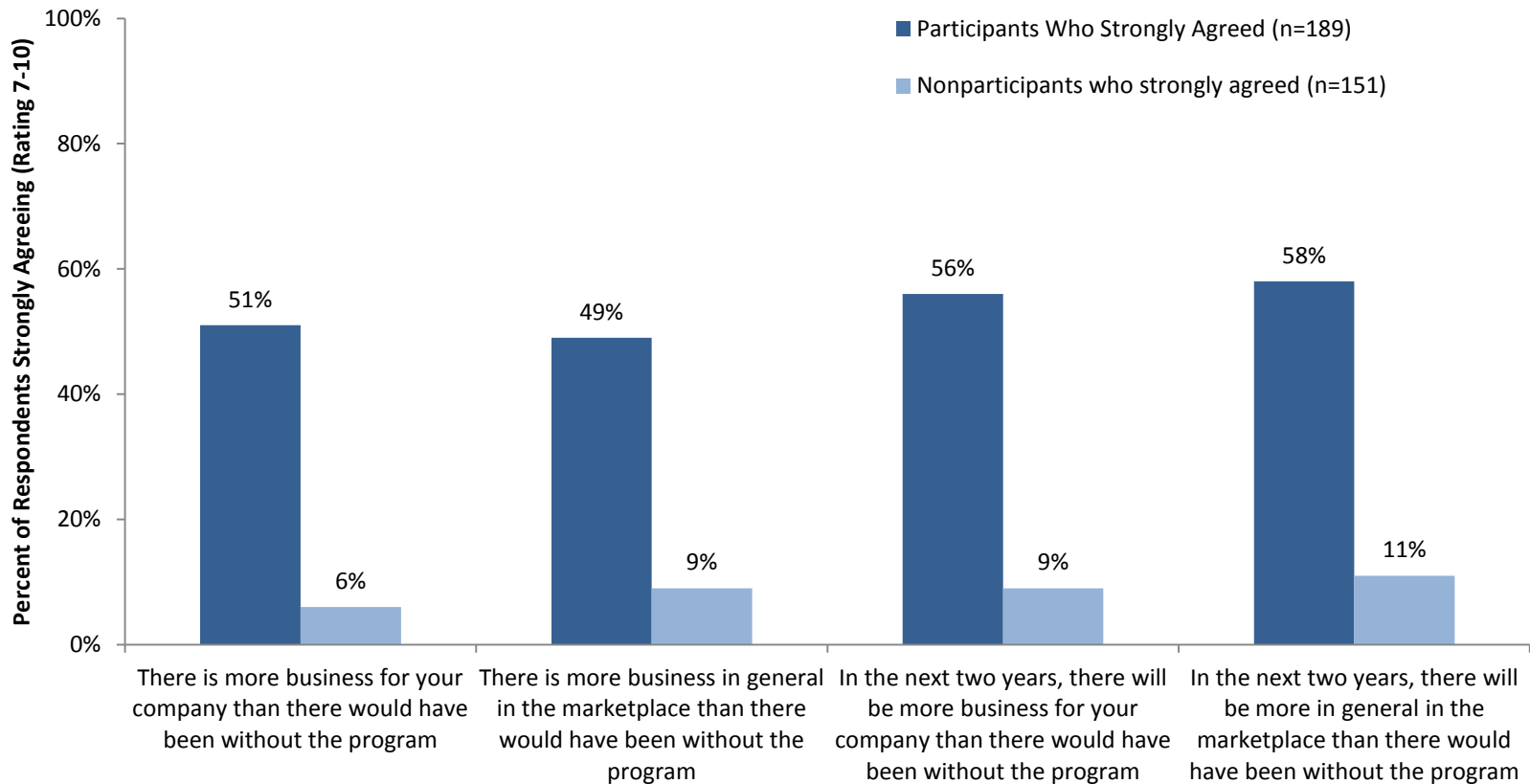
Sampled contractors/suppliers all located in (or working in) grantee service territories

Reported market effects are more pronounced in the most successful grantee areas

Multiple market effects identified

- Contractors agreed BBNP grantee programs having positive effects on...
 - *their businesses (increased activity)*
 - *the marketplace in general (increased activity)*
 - *their access to trained contractors (increased)*
 - *their marketing of EE (increased)*
- Suppliers agreed...
 - *increased sales and availability of EE products*

Contractor Assessment of the Effect of BBNP Grantee Program on the Market for Energy Efficiency



Average Percent of Net BBNP Upgrades Attributable to Individual Program Components

GRANTEE PROGRAM ELEMENT	PARTICIPATING CONTRACTORS			NONPARTICIPATING CONTRACTORS		
	N	Mean Percent of Projects	Percent of Net BBNP Upgrades*	N	Mean Percent of Projects	Percent of Net BBNP Upgrades
Rebates and other incentives	118	33%	26%	6	33%	<1%
Low-interest financing	112	26%	19%	7	16%	<1%
Free/reduced-cost energy assessments	120	23%	24%	6	18%	<1%
Marketing and outreach	113	20%	18%	6	16%	<1%
Training of contractors	98	10%	8%	6	14%	<1%

Average Percent of Upgrades with 15% or More Reduced Energy Usage

PROGRAM YEAR	PARTICIPATING CONTRACTORS		NONPARTICIPATING CONTRACTORS	
	N	Mean Percent of All Upgrades	N	Mean Percent of All Upgrades
2010	140	73%	97	53%
2011	158	72%	94	52%
2012	158	75%	101	56%

Contractor Training in Energy-Efficient Building Practices

	PARTICIPATING CONTRACTORS (<i>n</i> = 189)			NONPARTICIPATING CONTRACTORS (<i>n</i> = 151)		
	Percent of Respondents	Percent of Total Upgrades	Percent of Net BBNP Upgrades	Percent of Respondents	Percent of Total Upgrades	Percent of Net BBNP Upgrades
Received any training	93%	79%	91%	64%	16%	1%
Attended training sponsored by the BBNP grantee	61%	51%	79%	18%	1%	<1%
Believe number of trained contractors has increased (2010 to 2012)	84%	71%	84%	74%	15%	1%
Level of influence of BBNP on increased number of trained contractors is 7 or higher*	48%	31%	67%	8%	1%	<1%

DOE's 4 Pillars for BBNP...

- *Marketing*
- *Financing*
- *Workforce*
- *Data and reporting*

...appear to be necessary for upgrade program success

The pillars must work together; fewer strong pillars don't hold up the program

No “best” way to implement each pillar

- Each pillar needs to have multiple supporting elements to create an integrated whole
- No “silver bullet” or “must have” activities for success

We identify activities that have yielded good results...

...yet both successful and less-so grantees have done these

...and both groups have done things *not* on the “activities with good results” list!

We conclude (preliminarily) success is *not* associated with...

- *a specific organizational type*
- *with climate or building types served*
- *with specific services or measures offered (audits, qualifying measures, rebates, grants, financing)*
- *with the role of private sector firms in delivering program services*
- *with marketing methods*

We conclude success *is* associated with program activities that...

- Are complementary (examples follow)
 - *Outreach and audit scheduling process generates sincere interest, fostering high conversion rates, not lots of audits*
 - *Sales role is clearly defined and sales person has the training and information to emphasize the customer-specific benefits and address customer-specific concerns*
- Effectively address market barriers
- Coherently drive customers and trade allies to comprehensive building upgrades

And we conclude that grantees with prior efficiency experience and strong partnerships are more likely than other grantees to have such complementary, effective, coherent activities

Driving demand

- Program activities should be governed by sound logic linking:
 - *messaging*
 - *roles of the various supply-side actors*
 - *incentives*
 - *quality assurance*
 - *indeed, all program facets*
- Each activity should support the others and together drive toward upgrades
- A specific activity that is not *typical of* high-success grantees can nonetheless be part of a successful program if all elements coherently drive upgrades (example: direct installations)

Sales and marketing are different

- Good sales people tailor the sales message to the consumer's individual benefits and concerns
- Grantees were effective that paid attention to the sales process and thought about who (and in what role) sales would occur
- Sales training appears to be very effective
- Rebates and financing *facilitate* sales but do not *make the sale*

Stimulating supply

- Energy advisor – or not
 - *40% of high-success grantees assign energy advisor to each participant vs 10% of other grantees, suggesting its value*
 - *Yet 60% of high-success grantees don't use one, suggesting its not essential (contrary to the views of many market informants)*
 - *10% of lesser-success grantees use advisors, suggesting it's use doesn't guarantee success*
- Important to identify a set of qualified contractors (technically and in program requirements) and develop some basis to address or exclude poor performers
- Successful grantees stress the value of communication with contractors – learning from them

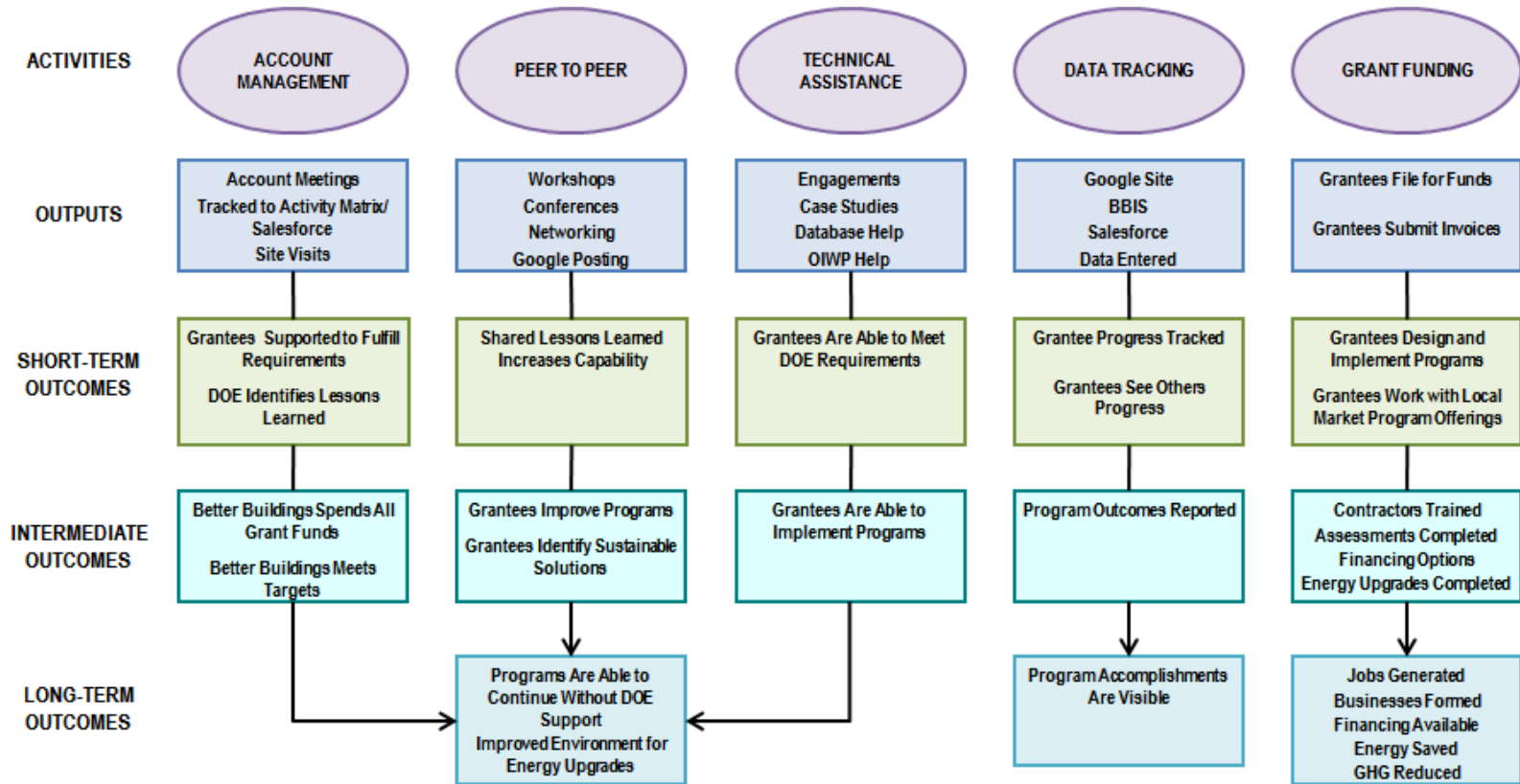
Partners

- Having a financial institution partner is better than trying to be a bank
- Credit enhancements can attract financial partners – yet demonstrated program success can reduce the need for credit enhancements
- Grantee staff experienced with financial products is an asset
- Typically (not always!) working with experienced program administrator was an asset

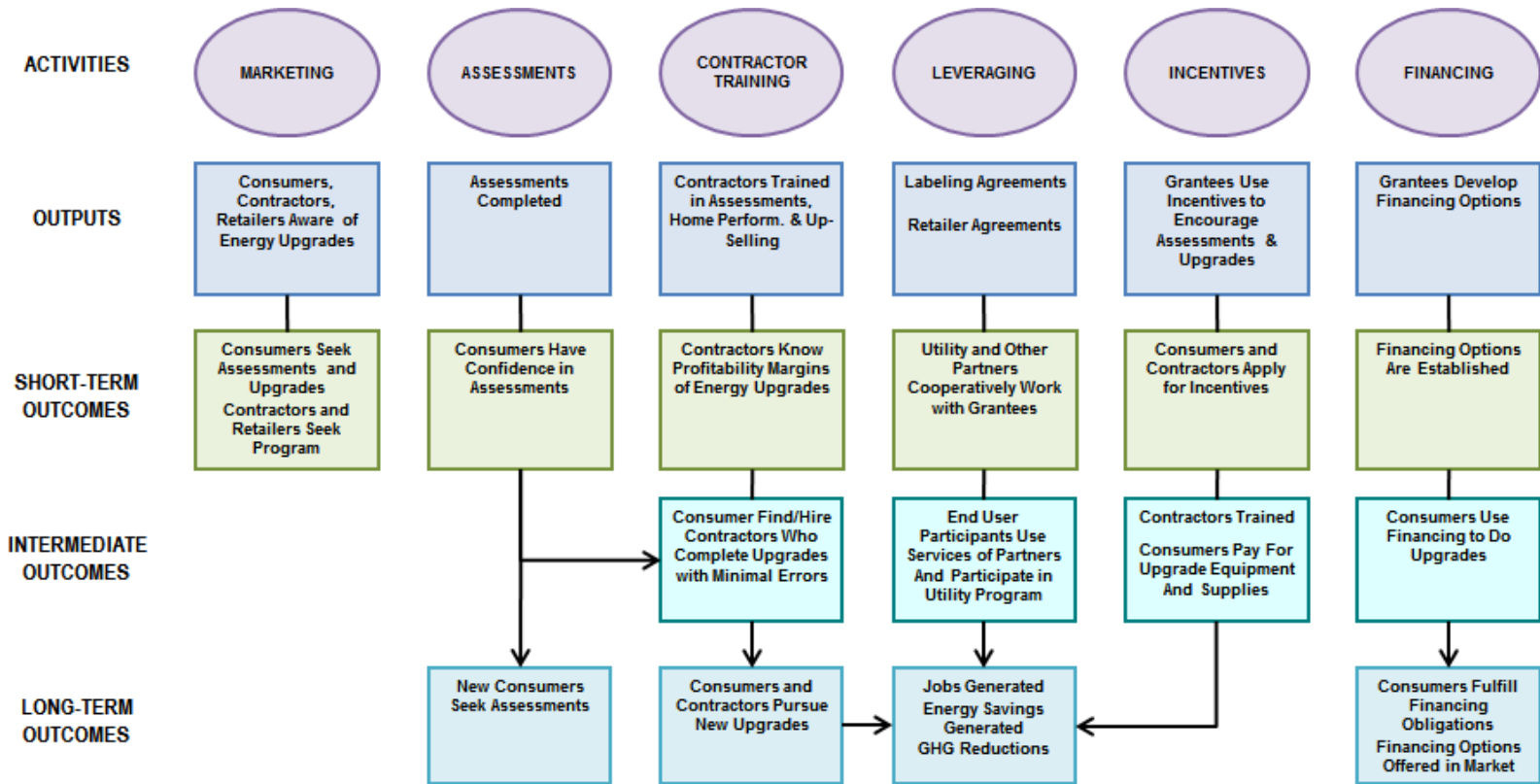
We conclude DOE is meeting its objectives:

- BBNP is generating a wealth of experience in alternative, and some very innovative, approaches to developing demand and supply markets for whole house and building upgrades
- DOE enabled and facilitated an exchange of grantee experiences that most grantees describe as highly valuable and contributing to their success

Better Buildings Neighborhood Program – DOE Perspective



Better Buildings Neighborhood – Grantee Perspective



We have recommended to DOE, for final program year, that it encourage grantees to:

- Clearly identify who has or should have the role of selling the upgrade, and then provide sales training to them
- Include messaging that emphasizes comfort and solutions to building problems, as these themes appear influential
- Simplify audits and connect audits to the upgrade sales process

We also recommended DOE encourage grantees to:

- Sponsor meetings that give contractors opportunities to share experiences with each other and with program teams
- Have a program with multiple components that logically and coherently drive demand and stimulate supply

And that DOE:

- *Promulgate these findings to market informants who lack empirical evidence of reasons for program success and failure and are generally unaware of BBNP efforts*

Our Methods

Table 1: Data Sources and Sampling Plan

DATA SOURCE/ SAMPLE GROUP	POPULATION	SAMPLE	HOW SAMPLE SELECTED	TYPE OF DATA COLLECTED
SECONDARY DATA				
Grantees' Secondary Data	41	41	Census	Quantitative and Qualitative
BBNP Program Secondary Data	NA	NA	All sources accessed	Quantitative and Qualitative
IMPLEMENTATION CONTACTS				
DOE BBNP Account Managers and Program Managers	8	8	Census	Qualitative: In-depth Phone Interview
Additional BBNP-Related DOE Staff and Contractors	13	7	DOE provided contacts; evaluators selected subjects	Qualitative: In-depth Phone Interview
Non-governmental Stakeholders	6	4	DOE provided contacts; evaluators selected subjects	Qualitative: In-depth Phone Interview
GRANTEE ANALYSES				
Grantee Success Metric	41	39	Census of those with complete metric-related data Quarter 2 2012	Quantitative
Grantee Activities and Experiences	41	35	Account Managers identified grantees fully up and running, no recent major change in approach or organization as of late Spring 2012	Qualitative: In-depth In-Person and Phone Interview

continued

Table 1: Data Sources and Sampling Plan, continued

DATA SOURCE/ SAMPLE GROUP	POPULATION	SAMPLE	HOW SAMPLE SELECTED	TYPE OF DATA COLLECTED
MARKET EFFECTS ANALYSES				
Market Informants	32	26	Targeted sample of national and regional experts in energy efficiency upgrades, programs, and products	Qualitative: In-depth Phone Interview
Grantees' for Market Effects Surveys	41	22	Account Managers identified as most active (most likely to have generated market effects)	NA – selected to drive vendor and contractor surveys
Participating Contractors	1,159	189	Lists provided by grantees	Quantitative and Qualitative: Survey
Nonparticipating Contractors	7,281	151	Purchased list	Quantitative and Qualitative: Survey
Vendors	585	164	Purchased list	Quantitative and Qualitative: Survey

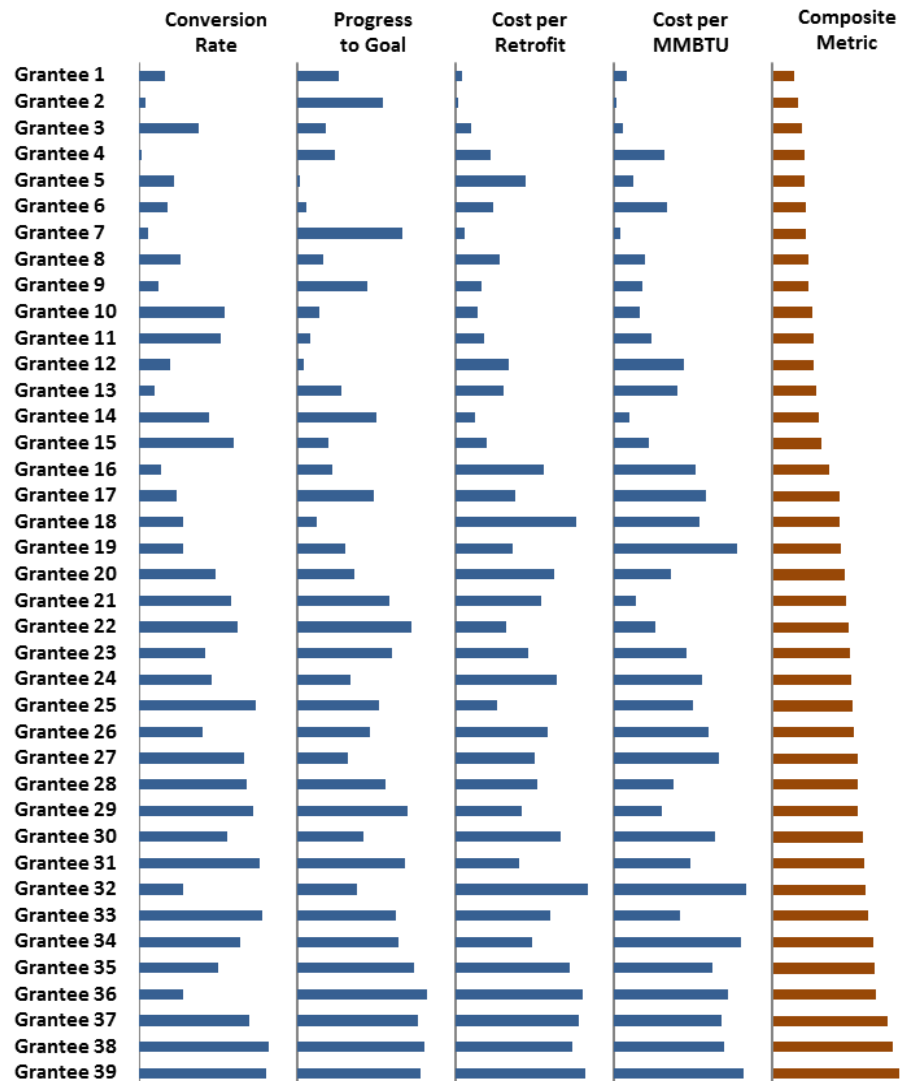
Grantees Included in the Preliminary Market Effects Survey

- Austin, TX
- Bainbridge Island, WA
- Boulder County, CO
- Connecticut
- Eagle County, CO
- Fayette County, PA
- Greensboro, NC
- Kansas City, MO
- Lowell, MA
- Maine
- Michigan
- New Hampshire
- NYSERDA
- Philadelphia, PA
- Phoenix, AZ
- Portland, OR
- Rutland County, VT
- San Antonio, TX
- Seattle, WA
- St. Lucie County, FL
- Toledo-Lucas Co. Port Authority (OH)
- University Park, MD

Grantee Success Metric:

- Metric is composite of grantees' rankings on four indices of success:
 - *Progress toward goal (number of completed upgrades as a percentage of targets)*
 - *Rate of conversion of audits to upgrades*
 - *Average cost per upgrade completed*
 - *Average cost per unit energy saved*
- Grantee achievements as of June 30, 2012
- We recognize each index has its drawbacks, but composite metric comported well with informed observers' sense of grantee success

Figure 1: Comparison of Component Success Metrics



*For the four component metrics, bar length indicates grantee rank
For the composite metric, bar length indicates relative value of the summed ranks*

We conducted in-depth interviews with 35 grantees

- Interviews:
 - *10 on-site, 25 by phone*
 - *Most over two hours, some up to five hours total with different parties (such as grantee and partner)*
- Selected grantees with input from Account Managers
 - *4 of 7 SEPs, 31 of 34 other awards*
 - *Programs fully up and running*
 - *Not having had recent change in management or program design*

Market Effects – Trade Allies

- Participating contractors – lists provided by grantees (working in grantee territories)
- Nonparticipating contractors and vendors – purchased lists (located in grantee territories)
- Contractors and vendors located in the territories of 22 grantees (from among the 35 interviewed)
- Over 550 surveys conducted

Our Draft Evaluation Was Improved by Comments of 11 Reviewers

- These reviewers set a high bar
- The reviewers complimented our work, yet pushed us further
 - *Revisions to preliminary report*
 - *Statement of expectations for final report*
- Consider the following comment...

“Actually I was uncertain of whether to be impressed that 212 pages of text resulted in such a short list of recommendations that succinctly captured the few things that can be said unequivocally at this point, or to be disappointed with the lack of additional recommendations. I have come down firmly on the side of being impressed. ‘This much we know; many other things we don’t; we will have to make bigger and more difficult judgments in the next round.’ ”

Did you notice the last sentence?

“... many other things we don’t; we will have to make bigger and more difficult judgments in the next round.”

- You guessed it... our work is not done, and we will be talking with many of you during the next 6 months

Evaluation Activities: Next 6 Months

RESPONDENT TYPE	REQUEST	EVALUATOR FIRM	WHEN	NOTES
Grantee – census Subgrantee – sample	Web-based survey	Research Into Action	Feb	To obtain data in consistent format across all grantees to support identification of success factors Working closely with DOE to avoid duplicated reporting
Grantee – sample	Phone call to request participant sample	Nexant; Evergreen Economics	Feb/ Mar	To obtain participant sample for impact estimation
Grantee – sample Subgrantee – sample	In-depth interview	Research Into Action; NMR	Apr - Jul	6 grantees not previously interviewed 5 subgrantees (not previously interviewed) 24 grantees for follow-up interview Possibility to interview during ACI conference 4/29 – 5/3
Grantee – sample	Email or call to request contractor list	NMR	Jun	Need participating contractor list for market effects survey
Participants	Web-based survey	Research Into Action	Mar/ Apr	Our reviewers requested this Most grantees want us to send email invitation to them; they will send to their participants

continued

Evaluation Activities: Further Out

RESPONDENT TYPE	REQUEST	EVALUATOR FIRM	WHEN	NOTES
Nonparticipants	Store intercept survey	Market research firm TBD	Jul	Our reviewers requested this To understand awareness and pursuit of EE upgrades among market at large
Participating financial institutions	Phone survey	Research Into Action	Jun - Oct	To understand market for upgrade loans, market effects
Participating contractors	Phone survey	CSRS (market research firm)	Aug - Nov	To understand market for upgrades, market effects
Nonparticipating contractors	Phone survey	CSRS (market research firm)	Aug - Nov	To understand market for upgrades, market effects
Equipment distributors	Phone survey	CSRS (market research firm)	Aug - Nov	To understand market for EE equipment, market effects
DOE and BBNP contractors	In-depth interview	Research Into Action	May - Nov	To understand DOE activities and perspectives

Why a preliminary and final evaluation?

- DOE wanted a preliminary evaluation report to provide mid-grant feedback useful to DOE's and grantees' BBNP teams
- Preliminary research also helps evaluators refine their methods and more deeply explore key areas still not well understood
- Final evaluation will use refined methods and deeper exploration
- Final evaluation may confirm or disconfirm preliminary findings

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Preliminary Report URLs

- Main body of the report (*Preliminary Process and Market Evaluation: Better Buildings Neighborhood Program*):

http://www1.eere.energy.gov/analysis/pdfs/bbnp_preliminary_process_market_eval_report_011513.pdf

- Appendices:

http://www1.eere.energy.gov/analysis/pdfs/bbnp_preliminary_process_market_eval_report_appendices_011513.pdf



Access the preliminary process & market evaluation report:

- http://www1.eere.energy.gov/buildings/betterbuildings/neighborhoods/resource_directory.html#evaluation

Access follow-up materials online:

- www1.eere.energy.gov/buildings/betterbuildings/neighborhoods/webcasts.html
 - PDF of the presentation
 - Video recording of the webcast
 - Transcript of the proceedings
- Materials should be available within one week of today's webcast