Green Jobs in the Residential Energy Efficiency Industry:

The Home Performance Industry Perspective on Training & Workforce Development

Presented By: Efficiency First

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HOME PERFORMANCE RESOURCE CENTER

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America's Home Performance Workforce

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Presentation Outline

- Research Overview & Methods
- The State of Industry
- Job Types & Requirements
- Employment Growth Projections
- The State of Training
- Recommendations for Workforce Training Providers & Policymakers
- Conclusions

Who is Efficiency First?

- National non-profit trade association
- More than 800 U.S. Home Performance contractors
- Representing the Home Performance industry in public policy discussions at state and national level
- Promoting the benefits of efficiency retrofitting
- Helping grow the Home Performance industry
- Key player in HOME STAR

The Challenge

- **How do we connect workforce supply with employer demand?**
  - Policy makers want to support economic development and a “green economy”
  - Hundreds of millions of $ flowing into workforce development &“green jobs” training programs
  - Training orgs not always sure what industry needs
  - Few certain about home performance industry employment growth expectations

Data & Methods

- Interviews with *20+ industry experts*
- Survey polling *161 home performance companies in 36 states*
- Review of existing literature
- Attendance at national & CA home performance conferences
- Peer review

What is Home Performance?

- Looking at the whole home
- Systemic approach
- Identify and fix problems in a home
- Goals:
  - Comfort
  - Durability
  - Health/Safety
  - Energy Efficiency

State of the Industry

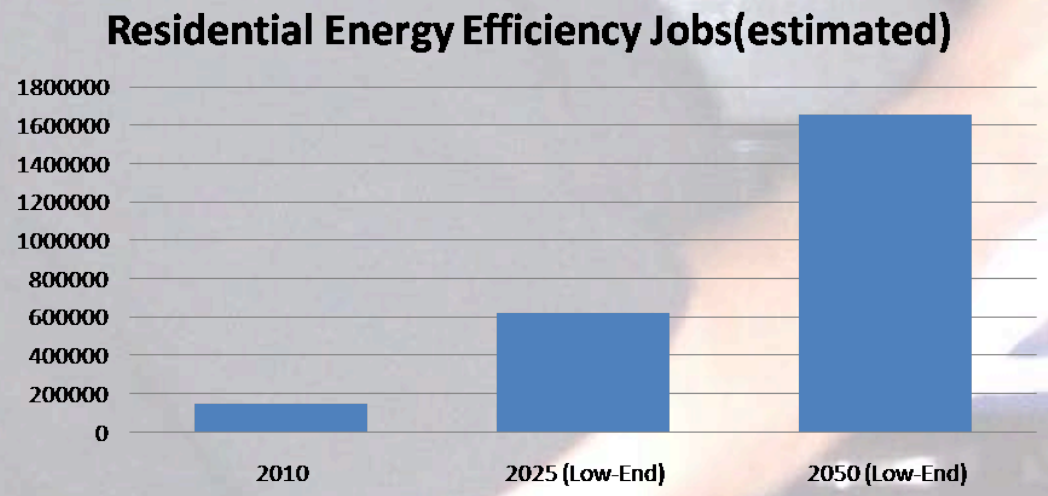
- Weatherization → Retrofit Programs → Home Performance Industry (66% <3 years in industry)
- Majority are Small Companies
  - 22% Founder/Owner & subs
  - 53% have <5 employees
  - 89% <50 employees
- No single residential energy efficiency market
  - Construction, HVAC, Insulation, Home remodel, Home Appliance, Equipment & Materials Manufacturers

Drivers of Home Performance Industry Growth

- Comfort, environmental, energy cost & health concerns
- Utility programs
- State & local retrofit incentives
- PACE (Property Assessed Clean Energy) financing
- Retrofit requirements & time of sale ordinances
- Proposed national legislation:
- Retrofit for Energy and Environmental Performance (REEP) as passed in ACES
- HOME STAR being considered by Congress ($6 Billion in incentives)

Employment Growth Projections

- Roughly 150,000 residential energy efficiency building & construction jobs today
- 12-13 direct jobs/ $1 million of investment
- 40,000-75,000 jobs per year to achieve a 25% reduction in residential energy consumption by 2025
- 650,000 to 1.1 million jobs by 2025



How do you do a Home Performance Retrofit?

- Find a Customer
- Identify & Explain the Problems
  - Home Performance Evaluation/Assessment "Test in"
  - Present the problems and possible solutions to homeowner
- Fix the Problems
  - Basic: Duct sealing, air sealing, insulation, etc.
  - Skilled Work: HVAC, Mechanical or Electrical Work, Window & Door Replacement, Plumbing
- Quality Assurance & Testing
  - "Test Out"

Job Types & Requirements

- Home Performance Auditors, Raters and Estimators:
  - evaluate the home energy usage & areas for improvement
- Retrofit Technicians:
  - conduct a basic retrofit or weatherization work

- Skilled Laborers
  - complete electrical work, plumbing, HVAC or mechanical system upgrades, and window and door replacement

- Quality Assurance Providers:
  - certify home performance improvements.
- Office & Support Staff:
  - provide administrative, managerial, promotional, and clerical support for the field workforce and customers.

Home Performance Promotional Jobs

- Analysts/Auditors/Estimators
- Business Development
- Marketing & Customer Education
- Inside & Outside sales staff

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Home Performance Promotional Job Requirements

- Good interpersonal skills
- Previous sales experience a plus
- Home components & construction knowledge
- “Green” or sustainable life philosophy

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Home Performance Field Jobs

- **Entry Level: Field Technician**
  - Minimum Training Required
  - Crawl space & attic work
  - Mostly Draft Sealing, Duct Sealing & Insulation Technicians

- **Intermediate/ Advanced Level: Crew Lead**
  - Additional Training Required
  - Experienced Field Technicians
  - Crew lead or construction manager (2-3 person crews)

- **Skilled Labor**
  - Carpentry, Electrical, Plumbing, HVAC, Window Replacement

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Home Performance Field Job Requirements

- Good attention to detail (78%)
- Good customer service, interpersonal and communication skills (78%)
- Problem-solving and critical thinking skills (76%)
- Reliable transportation, driver's license, clean driving record (64%)
- Drug-free (64%)
- Physically fit: able to lift 75 pounds, able to fit through minimum crawl space dimensions (56%)
- Construction or trade background (55%)
- Willing to get dirty (50%)
- No criminal background, or at least no theft or violence (46%)
- Able to accurately and legibly write and interpret reports (39%)
- "Green" or sustainable life philosophy (39%)
- Not claustrophobic – able to maneuver in tight, dark spaces (28%)
- Not afraid of heights: Able to climb ladders easily and confidently (23%)
- Can withstand heat (22%)
- Able to work on knees for long periods of time (16%)

Good Candidates for Home Performance Field Jobs

- Construction workers
- Drywall or flooring
- Remodelers
- HVAC technicians
- Athletes
- Veterans
- Day laborers

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Home Performance Office Jobs

- Managerial/ Administrative (i.e., HR, IT, etc.)
- Data Entry, Report Writing & Proposal Development
- Customer Service
- Rebate Processing
- Financial Advising
- Purchasing/ Inventory Management
- Engineers
- Project Managers
- Construction Managers
- Trainers

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Good Candidates for Home Performance Office Jobs

- Previous experience with:
  - Construction-related industries
  - Office administration
  - Accounting: Quickbooks
  - Engineers: Wrightsoft Suite
  - Customer Service reps
  - Warehouse Management

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Accreditation & Quality Control Jobs

- Field certification/training (i.e., BPI, HERS, Build It Green, RESNET, CBPCA, etc.)
- Third party verifiers & quality assurance inspectors (tied to incentive program requirements)
- Third party verifiers & quality assurance inspectors (tied to certifications)
- Written/field exam proctors

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Home Performance Pay Scales

Job Type	Wages
Field Technicians (entry-level):	$10 -$20/hr
Crew Leads	$14 -20/ hr
Building Analysts/ Raters	$15-22/hr
Mechanical systems & skilled	$25/hr & up
Sales	Generally salary or fee per job + commission

The State of Training

- Home Performance with Energy Star programs dedicate from 5 - 25% to workforce training
- ARRA Green Jobs Act: $500 million to the U.S. Department of Labor to support the development of a “green” workforce
- ARRA SEP Funds: 25 states allocated >$42.5 million toward energy efficiency workforce development (> 1%)
- Programs leveraging funds from ARRA, WIA, utilities, state agencies, & private foundations

Training Types

- Adult Education Training Centers (Green Collar Jobs Programs)
- Community College Coursework
- Independent BPI Affiliates & HERS Providers
- Union- Run Training Centers
- Online
- Training Within Industry
  - Mentor- Mentee Training
  - Manufacturer Training
  - Ongoing staff education

Training Pros & Cons

Training Type	Pros	Cons	% of Industry Rating Effective or Very Effective
Mentor-mentee training within company	Public funds can be leveraged with employer resources; Employers can choose mentor-trainee pairs that are a good fit; trainees get on-the-job training	may slow down company productivity; may require uncompensated time commitment from experienced workers	88%
Training offered by professional or trade association	Training program has connections to employers; generally utilize experienced trainers; curriculum aligned with industry need	may require payment	66%
Training for industry certifications by a BPI or RESNET affiliate (ie. BPI Building Analyst, HERS)	trainers often have experience in industry; always teach to industry-accepted standards; often have close links to employers	inconsistency in the experience and skill level of the certified workers; passing a test does not ensure worker "readiness"; lack of a single industry standard; until recently, no standards existed for retrofit worker certification	62%
Product manufacturer training	Incumbent workers can learn latest technologies and materials	Generally only provide training on specific equipment or materials use; infrequent; may require payment	44%

Community College special certificate program	ability to scale through curriculum replication at other colleges, willingness to work with employers; often low-cost or free for students	instructors often lack practical experience; limited opportunities for hands-on training; specialized certificates confuse industry and lack quality assurance	42%
University education	students can learn theory as well as application of building science principles; good for higher level technical or management positions	only relevant for specific positions within industry; slow to scale	33%
Community College semester-long course(s)	give students more education and exposure to industry; ability to scale through curriculum replication at other colleges; willingness to work with employers; often low-cost or free for students	instructors often lack practical experience; limited opportunities for hands-on training; may be slow or not fit incumbent workers' schedules; often only produce a small candidate pool	31%
Non-Profit Energy Efficiency Training Programs	Serves target populations (unemployed, low-income, people with barriers to employmment); free or low-cost for trainees; willing to work with employers	Trainees may not meet industry requirements (drug-free, no criminal record, etc.), often lack professional skills, and often have limited relevant work experience; program is generally completely reliant on grant funding & government subsidies; programs are incentivized to *train,* not to *place* trainees.	N/A*
Union Training Program	Trainers have years of experience conducting workforce training for construction-related industries; Unions can pre-screen candidates; Employers can hire program graduates without long-term commitment	Employers required to pay union wages; current industry skepticism about role of unions in industry	N/A*
Online	Students can learn at their own pace; course material available 24/7 for review; good complement to on-the-job or field training; requires less investment in training infrastructure; ability to scale training rapidly; may be translated into many languages; provides an easy way to track training institutions, Trainers and Trainees	limited opportunities to coach students on professional skills; lacks important hands-on & learning by doing component; may not work for students lack self-motivation or computer skills; may require payment	N/A*

Recommendations for Workforce and Training Organizations

Pre-Screen

- Evaluate individuals' physical, psychological, and intellectual aptitude for a position in the home performance industry *before* training begins.
- Screen based on
- 1) applicant's desire to work in industry
- 2) their ability to fulfill industry requirements for specific positions.

- Attention to detail
- Customer service, interpersonal and communication skills
- Reliable Transportation, Drivers License, Clean Driving Record
- Drug Fee
- Physically fit: able to lift 75 pounds, fits through crawl space dimensions
- Construction or trade background
- Willing to get dirty
- No criminal background, or at least no theft or violence
- Able to accurately and legibly write and interpret reports
- "Green" or sustainable life philosophy

Follow Industry-Approved Standards

- Teach to BPI, RESNET, Home Performance w/ Energy Star, or other industry-accepted standards
- Following professional certification program standards offers consistency & quality assurance
- Prepare workers for written and field tests
- Department of Energy to provide a single international standard for training provider accreditation and instructor certification

Standards & Certifications

- Most common:
  - BPI (11 types)
  - RESNET/ HERS
  - CA HERS & HERS II
- Companies will need at least one certified contractor to perform or oversee each job connected to financing or incentive programs
- Not yet generally required on hiring by employers, but good investment in future

Conduct Training in the Field

- Classroom learning is not sufficient
- No house is the same – no substitute for experience
- Important skills include:
  - equipment use and maintenance, air sealing, insulation materials and techniques, code compliance, moisture and mold abatement, asbestos removal, lead paint protocols, etc.
- Most successful programs include fast-transition field work, internships, apprenticeships, or other "on-the-job" (OJT) training

Teach Other Relevant Skills

- Include instruction on other relevant skills and provide information that will help trainees be more effective on the job.
  - Health & Safety
  - General politeness and punctuality
  - Sales & customer service
  - Problem solving
  - Software & Energy Modeling Programs
  - Local incentive or utility program rules and requirements
  - Basics of energy conservation
  - Complementary skill sets, such as installation of PV or solar hot water.

Develop Employer Relationships

- Recruit an industry advisory group
- Industry groups can help reach multiple employers
- Offer employers benefits, such as:
  - Marketing and community recognition
  - Assistance with other business issues
  - Candidate screening
  - Financial compensation for providing on-the job-training, internships, and apprenticeships
  - Other incentives for superior mentoring or participation.

Track Participants After Training

- Trainers should develop a systems of communications with trainees
- Follow up with program participants to:
  - Know who has found work
  - Who is still looking for work
  - Those companies looking for additional staff
  - Starting wages, benefits, etc.
- Identify effective mentors at companies, subsidize companies at higher rates if training effectively

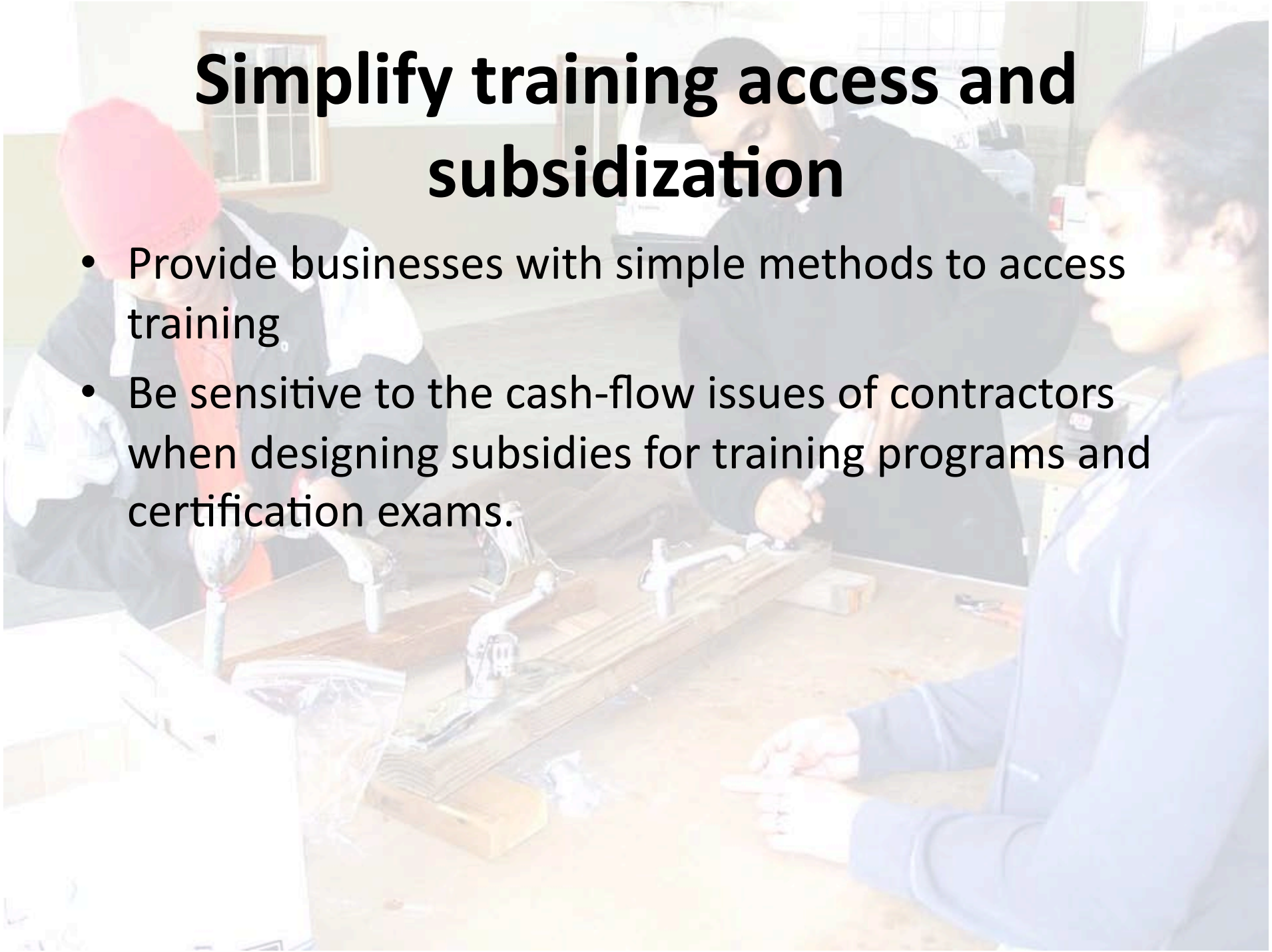
Recommendations for Policymakers

Match Supply with Demand

- Creating jobs is 1st step toward workforce development
- Most companies are more concerned about customer demand than worker supply
- 71% can find qualified entry-level retrofit workers in less than 1 month
- Develop demand-generating policies and programs at the same time as programs to increase worker readiness and training.
  - Pass proposed legislation like HOME STAR & REEP
  - Roll out PACE financing, utility incentives and home audit and retrofit rebate programs

Provide clear and reliable information

- Provide businesses with a solid understanding about:
  - Standards, certifications, or licenses required
  - Program timelines & “grace periods” before requirements begin



Simplify training access and subsidization

- Provide businesses with simple methods to access training
- Be sensitive to the cash-flow issues of contractors when designing subsidies for training programs and certification exams.

Support Training- Within-Industry

- Provide funding to offset the cost of on-the-job training, apprenticeships, and mentoring.
- Using a TWI model could:
  1) Jump-start the residential energy efficiency industry
  2) Spend training funds only on workers with real potential for a defined career path within the industry
  3) Offer the fastest way for trainees to gain portable industry skills since they would gain field experience on a daily basis.

Allow choice in the training marketplace

- Make sure training subsidies can be received through multiple certified providers
- Employers will select the training that works best for their needs

Offer Funding Consistency

- ARRA funds offer a large infusion of cash for 2 years
- Training funds should be consistent over several years or escalated in response to increases in program scale or customer demand

Industry Challenges & Concerns

- **Today**: How can we hire people if we don't first increase customer demand?
- **As demand grows**: How quickly will we be able to scale and find qualified workforce?
- **When economy rebounds**: Will we be able to keep good employees in this industry when other construction jobs provide more pleasant working environments?

Conclusions

- Increasing demand is first step toward workforce development
- Once demand increases, companies will grow
  - Re-hire/Retrain incumbent workforce
  - Increase use of subs
  - Train & hire new entrants
- Important to lay the groundwork now and get the training infrastructure right
- Established standards, OJT, and partnerships between training providers & employers will support quick industry scaling

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By:

Elizabeth Redman,

eredman@gmail.com

Full report will be available

On Home Performance Resource Center website:

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