



The Parker Ranch installation in Hawaii

Energy Code Compliance and Enforcement Best Practices

October 14th, 2010 - 2:00-3:00 PM EST

**Jim Meyers, Eric Makela,
Bruce Dimmig**

Southwest Energy Efficiency Project
Pacific Northwest National Laboratory
PROject Resource Origins

- Facilitated by: Curtis Framel, SWEEP

- Technical Assistance Project (TAP) Overview
- Part 1: Assess Current Practices
- Part 2: Compliance Best Practices
- Part 3: Enforcement Best Practices
- Resources
- Q&A

- Questions and discussion after presentation
- Have your questions ready
- To ask a question/make a comment
 - If you want facilitator to read your question – Type your question in “questions” box, specify speaker to address
 - If you want to speak – use “Raise hand” function and type question in “questions” box, when you are recognized you will be un-muted

DOE's Technical Assistance Program (TAP) supports the Energy Efficiency and Conservation Block Grant Program (EECBG), the State Energy Program (SEP) and the Better Buildings grantees by providing state, local, and tribal officials the tools and resources needed to implement successful and sustainable clean energy programs.



TAP offers:

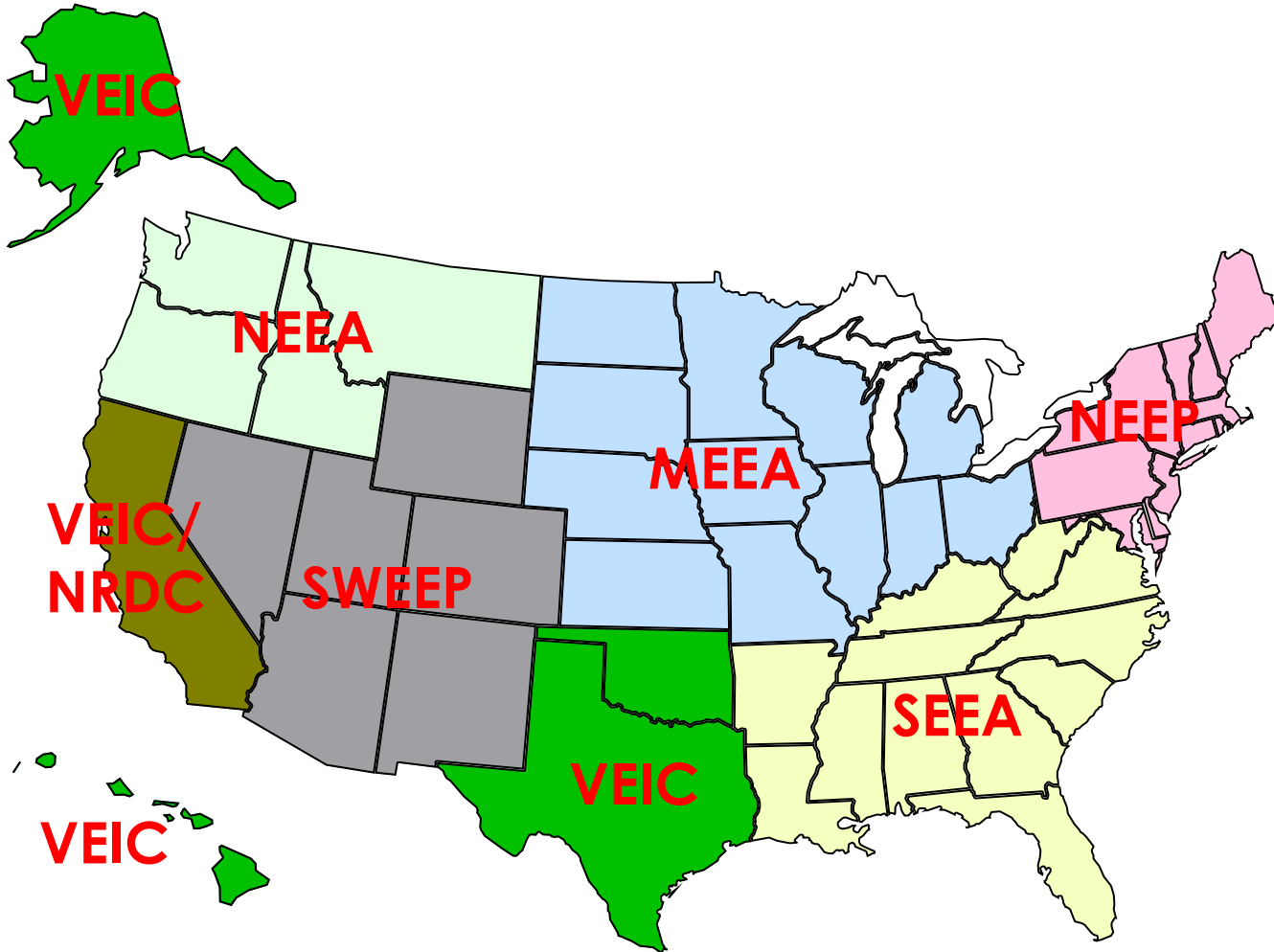
- One-on-one assistance
- Extensive online resource library, including:
 - Webinars
 - Events calendar
 - TAP Blog
 - Best practices and project resources
- Facilitation of peer exchange

On topics including:

- State and local capacity building
- Energy efficiency and renewable energy technologies
- Program design and implementation
- Financing
- Performance contracting

<p>State and Local Capacity Building</p>	<ul style="list-style-type: none"> • Trainings • Workshops • Peer-to-peer matching
<p>Technical</p>	<ul style="list-style-type: none"> • Renewable energy siting and development • Review of technical specs for RFPs • Strategic planning, energy management, and conservation strategies • Green building technologies • Building codes
<p>Program Design and Implementation</p>	<ul style="list-style-type: none"> • Policy and program development • Coordinating rate-payer funded dollars with ARRA projects and programs • Sustainable community and building design • State and regional EE and RE assessments and planning • EE and RE portfolio program design elements
<p>Financial</p>	<p>Program design support and guidance on financing mechanisms such as:</p> <ul style="list-style-type: none"> • Revolving loan funds (RLFs) • Property-assessed clean energy (PACE) • Loan loss reserves and enhanced credit mechanisms
<p>Performance Contracting</p>	<ul style="list-style-type: none"> • Designing and implementing a performance contract • Leveraging private investment • Reducing institutional barriers • Tracking and comparing programs

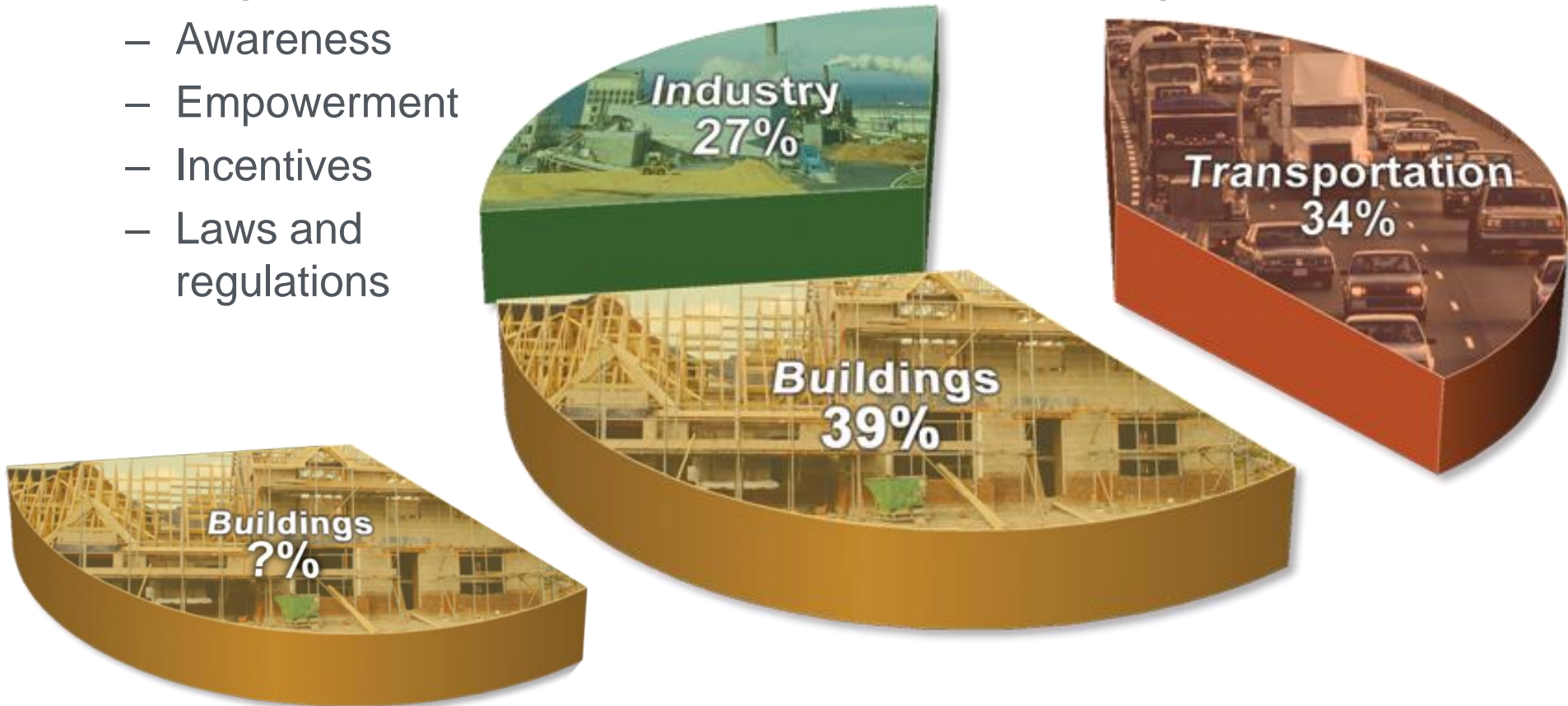
Who We Are: Team 4



ACEEE, NRDC: National Support

- Gain a general understanding of the purpose of energy codes, standards, and programs
- Understand compliance and enforcement requirements for energy codes
- Understand energy code relationship with Section 410 of the American Recovery and Reinvestment Act (ARRA)

- Buildings use 40% of our nation's energy
- Changes in human behavior will reduce energy use
 - Awareness
 - Empowerment
 - Incentives
 - Laws and regulations

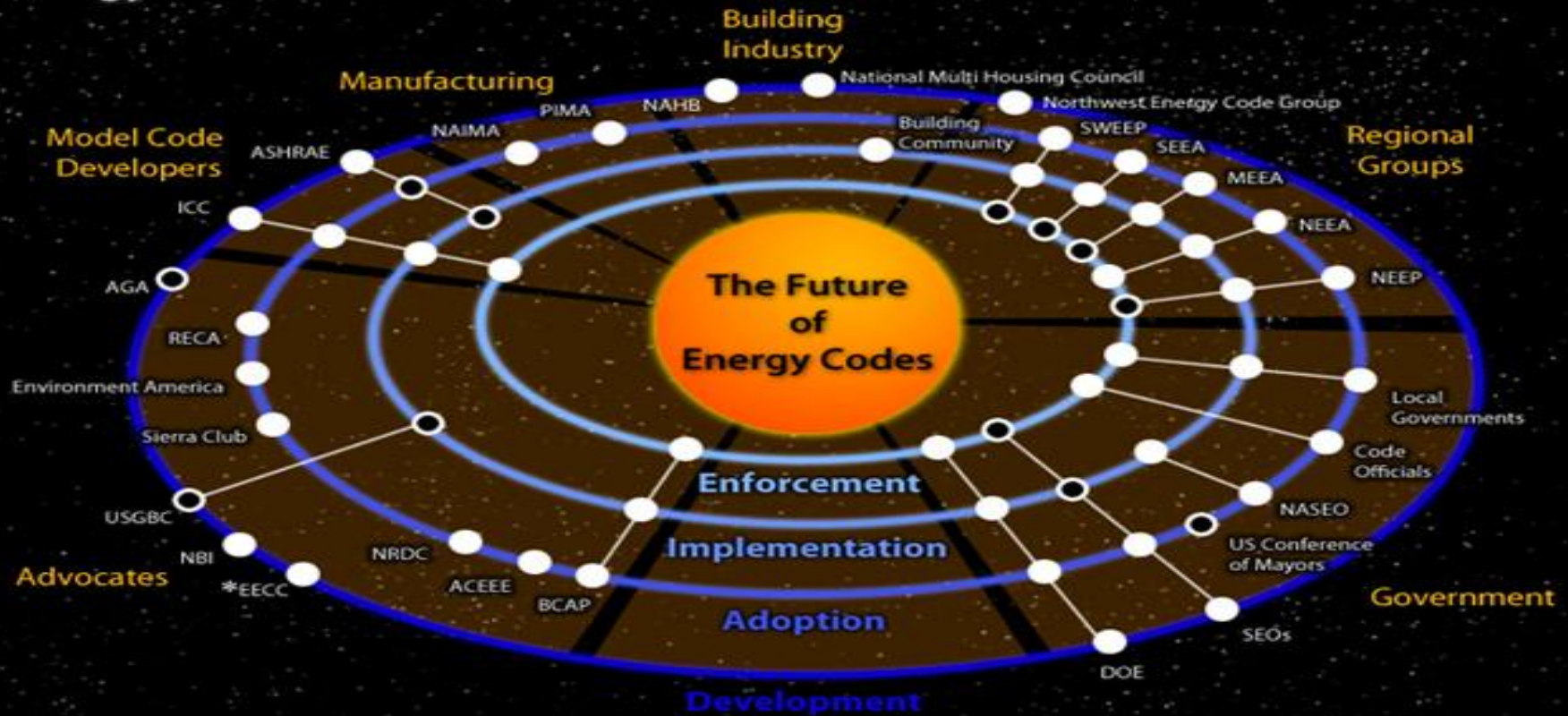


What is an Energy Code / Standard?

- Addresses the integration of building components into a system
- In some cases it addresses the design and construction practices
- Building enclosure (walls, windows, floor, ceiling)
- Heating and cooling equipment
- Sizing of the equipment
- Building and mechanical system leakage
- In some cases materials

Energy Code Universe

Energy Codes Universe

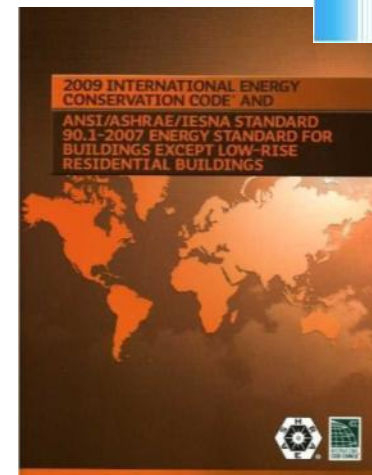
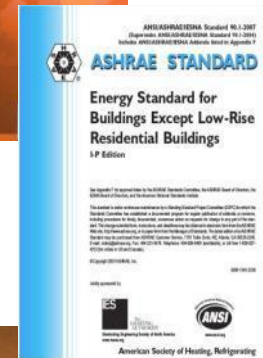
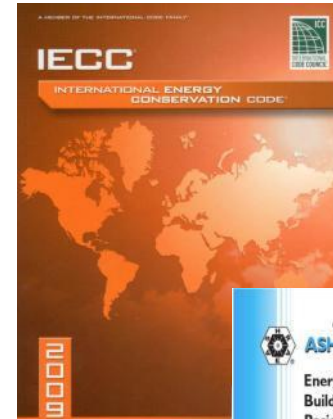


Key

- Denotes groups engaged in the corresponding activity
- Indicates opportunities for future involvement
- * Represents a broad coalition of supporting organizations

Energy Code and Standards Development

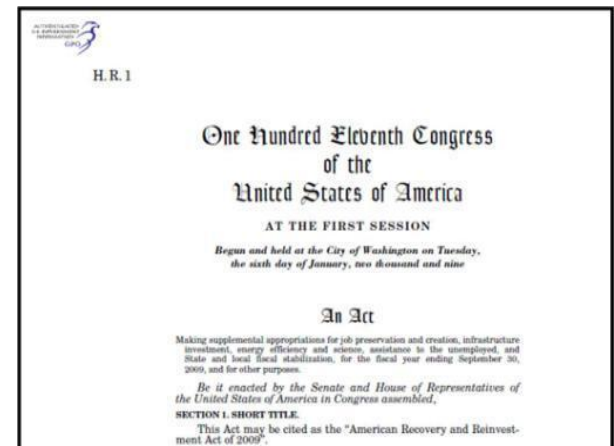
- International Code Council – International Energy Conservation Code (IECC)
 - 3 year cycle – latest release 2009
- American Society of Heating, Refrigerating and Air-Conditioning Engineers - Standard 90.1
 - 3 year cycle – latest release 2010 (late October publication)



- Why do some jurisdictions adopt the energy codes when no mandates exist?
 - ICC
 - ASHRAE
 - COMcheck and REScheck
- Products, materials, and practices
- Many localities and states are expressing increased interest in energy codes in response to the ARRA



- The State, or the applicable units of local government that have authority to adopt building codes, will implement the following:
 - A building energy code (or codes) for residential buildings that meets or exceeds the most recently published International Energy Conservation Code, or achieves equivalent or greater energy savings.
 - A building energy code (or codes) for commercial buildings throughout the State that meets or exceeds the ANSI/ASHRAE/IESNA Standard 90.1-2007
 - A plan to achieve 90 percent compliance with the above energy codes within eight years



Part 1: Assess Current Practices

- Understand where you are today
- Answer these four questions:
 - What is your current energy code?
 - Are there plans to adopt a newer energy code?
 - Why do you want to adopt an energy code?
 - What are the most significant barriers to code adoption and compliance in your locality?

- Population
- Identify strengths and weaknesses (across building industry)
- Additional resources available in the region/state
- New single family housing starts
- Commercial construction permits
- Are there voluntary programs operating in your community

U.S. Census Bureau

MANUFACTURING, MINING, AND CONSTRUCTION STATISTICS
It All Starts Here!

Manufacturing • Mining • Construction

Business Help Site Questions? Economic Census • Inside MCD •

Building Permits

Historic Annual Building Permit data by State are now available with data back to 1960!

The Percent of Population in Permit Issuing Areas file has been updated based on the 2000 Census and 20,000 place universe.

The 2009 Annual Housing Units Authorized by Building Permits data are now available. The Building Permits Series has the usual annual revisions for 2009.

RESNET
Residential Energy Services Network

Energy Star AN ENERGY STAR QUALIFIED HOME

Address:

City:

State:

Zip:

Additional Information:

This form has been independently verified by an independent professional in your RESNET 2009 state jurisdiction for energy efficiency. Each ENERGY STAR qualified home can save \$300 to \$1,000 in potential energy costs of use in each year.
www.energystar.gov



What is Your Current Compliance and Enforcement Process?

- Permitting
- Plan Review
- Field Inspection
- Certificate of Occupancy
- Staff Certification Requirements
- Third-party infrastructure

Jurisdictional Needs to Support Compliance and Enforcement

- Education, training
- Building department staff
- Building industry, knowledge, understanding
- Suppliers, example of windows and tax credit



 National Fenestration Rating Council® CERTIFIED	World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider
ENERGY PERFORMANCE RATINGS	
U-Factor (U.S./I-P) 0.30	Solar Heat Gain Coefficient 0.30
ADDITIONAL PERFORMANCE RATINGS	
Visible Transmittance 0.51	Air Leakage (U.S./I-P) 0.2
Condensation Resistance 51	—
<small>Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>	



On-line Training Center

HOME

CONTACT US

HELP

Building Codes

Building Envelope

HVAC

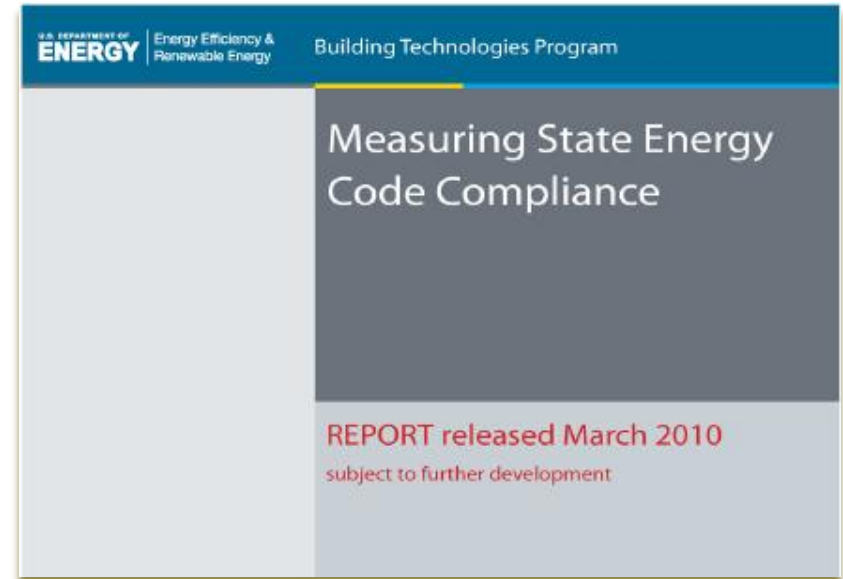
Water Heating



Part 2: Energy Code Compliance Best Practices

Recovery Act Requirements Adoption and Compliance

- Contents
 - Code Adoption and Equivalency
 - Annual Measurement
 - Planning for Compliance Evaluation
 - Onsite Compliance Evaluation Procedures (includes generating the sample sets)
 - Evaluation Checklists



- http://www.energycodes.gov/arra/compliance_evaluation.stm

- Checklists and instructions available for:
 - 2009 IECC Residential (Chapter 4)
 - 2009 IECC Commercial (Chapter 5)
 - 90.1-2007 Commercial
- Alternative checklists for other codes may be requested
- Evaluator training covers use of checklists

http://www.energycodes.gov/arra/documents/compliance_checklists.zip

- Developed by climate zone
- Contain prescriptive requirements for each climate zone
- Contain instructions for each requirement

Residential Data Collection Checklist
2009 International Energy Conservation Code
Climate Zone 5 and Marine 4

Date: _____ Name of Evaluator(s): _____

Building Name & Address: _____ Conditioned Floor Area: _____ ft²

Building Contact Name: _____ Phone: _____ Email: _____

Compliance Approach: Prescriptive (402.1.2 or 402.1.3) UA Trade-Off (402.1.4) Building Performance (405)

State: _____ Jurisdiction: _____

Building Type: 1- and 2-Family, Detached: Single Family Modular Townhouse
Multifamily: Apartment Condominium

Project Type: New Construction Addition to existing building Existing building renovation¹

Item Number ²	Pre-Inspection/Plan Review	Code Value	Verified Value	Complies			Comments/Notes/Findings
				Y	N	N/A	
PR1 [103.2] ¹	Construction drawings and documentation submitted and available. Documentation sufficiently demonstrates energy code compliance.			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR2 [103.2] ¹	HVAC loads calculations: Heating system size(s): Cooling system size(s):		180: 180:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Additional Comments: _____

- One checklist for all climate zones
- Expectation of evaluator knowing and/or having the code or standard

Commercial Building Data Collection Checklist
ANSI/ASHRAE/IESNA Standard 90.1-2007

Date: _____ Name of Evaluator(s): _____

Building Name & Address: _____ Conditioned Floor Area: _____ ft²

Building Contact: Name: _____ Phone: _____ Email: _____

Compliance Approach: Prescriptive Trade-Off (Section 5.6) Performance (ECB Section 11)

Size: _____ Jurisdiction: _____

Building Use: Office Retail Storage Education Lodging Dining Public Health Residential Other _____

Project Type: New Construction Addition Renovation Valuation (if Renovation): \$ _____

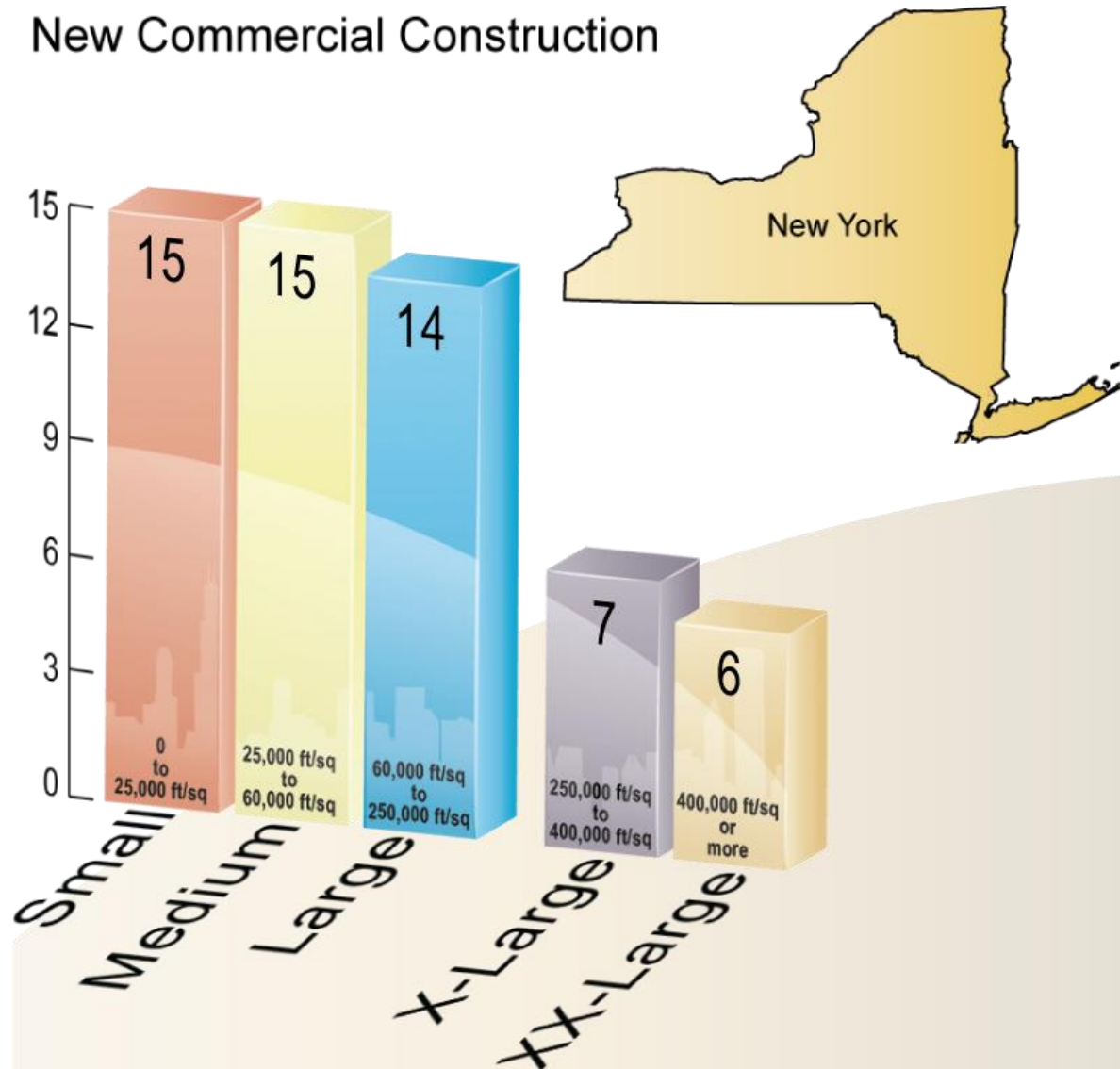
Item # ASHRAE 90.1-2007	Plan Review	Complies			Comments/Notes/Findings
		Y	N	N/A	
PR1 (4.2.2) ¹	Plans and/or specifications provide all information with which compliance can be determined for the building to the standard and document where exceptions to the standard are claimed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR2 (4.2.2) ¹	Plans and/or specifications provide all information with which compliance can be determined for the building to the standard and document where exceptions to the standard are claimed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR3 (4.2.2) ¹	Plans and/or specifications provide all information with which compliance can be determined for the building to the standard and document where exceptions to the standard are claimed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR4 (4.2.2) ¹	Plans and/or specifications provide all information with which compliance can be determined for the building to the standard and document where exceptions to the standard are claimed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR5 (4.2.2) ¹	Plans and/or specifications provide all information with which compliance can be determined for the building to the standard and document where exceptions to the standard are claimed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR6 (5.4.2) ¹	HVAC load calculations submitted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR7 (7.4.2) ¹	Service water heating load calculations submitted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR8 (8.7.2.4) ¹	Detailed instructions for HVAC systems commissioning included on the plans or specifications.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR9 (8.7.2.1) ¹	Construction documents require HVAC "as-built" drawings submitted within 90 days of system acceptance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR10 (8.4.1.1) ¹	Feeder and branch circuit load and sizing calculations provided that allow verification of voltage drop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR11 (8.7.1.1) ¹	Construction documents require submittal drawings for electric power systems and O&M manual for electrical power systems and equipment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PR12 (8.7.2) ¹	Construction documents require submittal drawings for electric power systems and O&M manual for electrical power systems and equipment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Additional Comments: _____

- Evaluate a statistically valid sample of $44 \pm$ buildings in the state in each of the following 4 populations:
 - New residential
 - New commercial
 - Residential renovations
 - Commercial renovations

Extra samples may be required for X-Large and XX-Large buildings.

New Commercial Construction



State Sample Generator

Generate a random co

State Sample Generator

← Back to U.S. map

Generate a random

Click a state



WYOMING

Choose a construction category and time period

Construction Category

Time Period Average of 3 M
 Average of 2 M
 Most Recently A

Generate Samples

CONSTRUCTION S

Commercial New

Construction starts represent an annual average f

Location	Construction Starts
State Total	537
Climate Zone 5 Total	13
Climate Zone 6 Total	437
Climate Zone 7 Total	87

WYOMING

Choose a construction category and time period to filter sample results.

Construction Category

Time Period Average of 3 Most Recently Available Years
 Average of 2 Most Recently Available Years
 Most Recently Available Year

Generate Samples

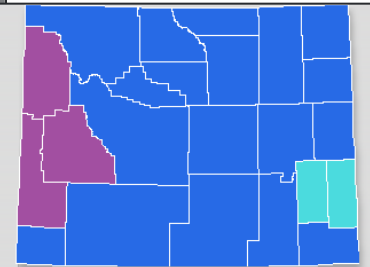
CONSTRUCTION SAMPLES

Commercial New

Construction starts based on 2009 data.

Location	Construction Starts	Sample Size				
		Small	Medium	Large	X-Large	XX-Large
State Totals	264	10	10	9	0	0
Climate Zone 6 Totals	437	9	8	7		
Campbell County	38	2	-	3		
Fremont County	39	1	3	-		
Natrona County	59	3	-	4		
Park County	41	3	5	-		
Climate Zone 7 Totals	87	1	2	2		
Lincoln County	12	-	1	-		
Sublette County	12	-	-	2		
Teton County	63	1	1	-		

Download as: [CSV File](#)



Climate Zone Color Legend

- Climate Zone 5
- Climate Zone 6
- Climate Zone 7

- Goal of evaluator training
 - Provide the tools needed and specific training on those tools to evaluate statewide residential and commercial compliance with the 2009 IECC or ASHRAE 90.1-2007
 - Ensuring that the evaluators have the knowledge of the program at large to go into the field and perform an effective evaluation (interact with the locals and gather the data and schedule additional visits if necessary)
- Target audience for training
 - 3rd-party contractors
 - Building officials
 - State Energy Office staff
 - Others interested in providing evaluation services to states

- New construction scored differently than renovations
 - Individual buildings for new construction receive individual building scores
 - Renovations are scored at state level only
- Checklist items are ranked and scored according to impact
 - Tiers 1-2 for residential
 - Tiers 1-3 for commercial
- State scores for new commercial construction are weighted by building size

General building information only required if different than above

Date: _____ Name of Evaluator(s): _____

Building Name & Address: _____ Conditioned Floor Area: _____ ft²

Building Contact: Name: _____ Phone: _____ Email: _____

Compliance Approach: Prescriptive Trade-Off (Section 5.6) Performance (ECB Section 11)

Item Number	Framing / Rough-In Inspection	Verified Value	Complies			Comments/Notes/Findings
			Y	N	N/A	
FR1 [5.8.2.2] ¹	Fenestration products are certified as to performance labels or certificates provided.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FR2 [5.5.3.1, 5.8.1.2] ¹	Roof insulation R-value provided. Installed per manufacturer's instructions.	R-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FR3 [5.5.4.2.1, [5.5.4.2.2] ¹	Performance compliance approach submitted for vertical fenestration area >40% or skylight area >5%.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FR4 [5.5.4.3a] ¹	Vertical fenestration U-Factor.	U-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FR5 [5.5.4.3b] ¹	Skylight fenestration U-Factor.	U-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FR6 [5.5.4.4.1] ¹	Vertical fenestration SHGC value.	SHGC -	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FR7 [5.5.4.4.2] ¹	Skylight SHGC value.	SHGC -	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FR8 [5.8.2.1] ²	Fenestration products rated in accordance with NFRC.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FR10 [5.4.3.2] ³	Fenestration and doors meet maximum air leakage requirements.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
FR12 [5.4.3.4] ³	Vestibules installed per approved plans.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Additional Comments: _____

- Store and Score Tool

Home - GST&P Group Site | localhost:8080/ScoreAnd... | localhost:8080/ScoreAndStore/checklistinput/stage/save/1

Residential Data Collection Checklist

IECC 2009

Prev **Stage 1: Pre-Inspection/Plan Review** Next

Date: 10/13/2010 Name of Evaluator(s): Jim Smith Building Name: West Tower
Street Address: 1207 N 85th St City: Tuscon Conditioned Floor Area: 18000 ft²

Building Contact:
Name: Pam O'Connell Phone: (520) 646-2983 Email: oconnell@gmail.com

Compliance Approach:
Prescriptive (402.1.2 or 402.1.3) UA Trade-Off (402.1.4) Building Performance (405)

Item Number	Description	Code Value	Verified Value	Complies	Comments/Notes/Findings
PR1 [103.2] ¹	Construction drawings and documentation submitted and available. Documentation sufficiently demonstrates energy code compliance.			<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> NA	
PR2 [403.6] ²	HVAC loads calculations: Heating system size(s):		<input type="text"/> kBtu	<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> NA	

Additional Comments:

Update Stage

10:14 AM 10/1/2010

- What is your state compliance rate?
- Which building systems have the lowest compliance rates?
- Which building use types have the highest rate of compliance? The lowest?
- Which energy code requirements most often fail? By how much and what is the impact?
- Which energy code requirements almost always comply?
- What percentage of building compliance is demonstrated under each of the compliance approaches (prescriptive, trade-off, performance)?

ENERGY
Energy Efficiency &
Renewable Energy

Measuring State Energy Code Compliance

Step-by-Step Companion Guide

Step 1
OBTAIN EVALUATION CHECKLISTS

A reliable measurement of energy code compliance calls for onsite evaluations of a valid sample of building projects—both new construction and renovations. To “check on” compliance, the first step to it is to have a proper checklist. BECP offers step to it to have a proper checklist. BECP offers evaluation checklists for both residential and commercial buildings, complete with instructions to help evaluators. The checklists offer weighted scoring in order to focus on the most important code requirements and help states produce accurate metrics.

BECP Tool:
Download inspection checklists and corresponding instructions at www.energycodes.gov/iana/compliance/evaluation.htm

Step 2
GENERATE SAMPLES

With checklists in hand, the next step is to determine which buildings to inspect. BECP recommends the evaluation of a statistically significant number of buildings in each of the following four building populations:

- Residential new construction
- Commercial new construction
- Residential renovations
- Commercial renovations

Within each population, roughly 44 building projects* should be selected randomly and in such a manner as to provide a representative sample with respect to building type and size, location by county and climate zone, and other factors.

BECP Tool:
Leave the math to us—BECP offers State Sample Generator, an automated solution for your state. You can find your state’s custom Sample Generator at <http://www.energycodes.gov/SampleGen>

Step 3
CONDUCT ONSITE EVALUATIONS

So you can obtain data to collect, and you know where to go to them. But who and how? Formal procedures evaluation may be conducted by third party evaluators. For some evaluation, importing to the energy code is a second option, but when new to new by the process. Of course, there are resource breaks—sometimes brings one less from you. You’ll find the various to help answer your compliance-related questions. In particular, you’ll find Education and Training Solutions and On-Site and E-Check Tools.

BECP Tool:
BECP is beginning to launch Existing Energy Codes University (EECU), your one-stop resource for energy codes education and training. New modules include a series of training presentations for compliance evaluators, complete with real-world video clips. www.energycodes.gov/eeu

Step 4
ANALYZE YOUR STATE'S DATA

How did you do? Did you get new compliance rates? Did you get better than you should be? Can you be used and used? At this stage, you can generate an overall state compliance metric. For this states may send BECP their compliance data or use BECP’s Checklist Score and State Tool. With a small compliance score and percent of non-compliance, this tool will provide a breakdown of code. It will also provide a breakdown of code. It will also provide a breakdown of code.

BECP Tool:
Don’t waste your staff’s valuable time sorting through paper checklists to determine compliance. Instead, enter raw data into BECP’s Checklist Score and State Tool (coming soon to www.energycodes.gov/ana/compliance_evaluation.htm) to generate building and state-wide metrics.

ALTERNATIVE OR PRACTICE ROUTES

In some states, Steps 1-4 may not be feasible for a variety of reasons. Thus, BECP offers various suggested alternatives to the formal procedures. For example, training and annual measurements can be implemented by code, using risk assessments, which will help improve compliance rates over formal procedures are applied. The graphic represents how self-assessment can fit into the compliance measurement process—where data are used with the larger Measuring State Energy Code Compliance document.

We Need Your Feedback

As your state makes progress in all of its compliance activities, BECP wants to know how you’re doing. We need your feedback to help us improve our tools and support. Please email feedback to kate.covey@eeere.energy.gov.

Thank you!

The effort to develop a national energy code compliance program is a large and complex task. It is a task that requires the participation of many stakeholders. BECP is grateful for the support and assistance of all those who have helped us in this effort. Thank you for your hard work and dedication to energy efficiency.

Building Code
www.energycodes.gov

ENERGY
Energy Efficiency &
Renewable Energy

EEERE Initiative 2016
1-877-875-8749
www.energycodes.gov

BECP Solutions & Help Center: www.energycodes.gov/help/

Part 3: Energy Code Enforcement Best Practices

- **Where enforcement begins:**
 - **Knowledge**
 - Training/Education
 - Code Institutes, ICC Hearings, Continuing Education (in-house and out), webinars and Certifications
 - Books/Publications
 - Proper number of the currently adopted and referenced code books, standards, regulations
 - Additional Resources
 - Internet access, Trade Organizations, copies of past code editions, adequate support staff and software

- **Jurisdictional support for enforcement:**
 - Adoption
 - Don't amend out portions of the code, they are more effective as a complete package
 - Budgeting
 - Provide proper funding for the items and processes needed to conduct enforcement in a holistic manner
 - Additional Items
 - Foster cooperation amongst the jurisdiction's departments involved in the enforcement process
 - Third party enforcement

- **Prior to Permitting:**
 - **Plan Review**
 - Review plans for conformance to the codes and standards
 - Evaluate any alternate methods and/or materials submitted
 - Include requirement to have contract document submittals provide COMcheck, REScheck or other energy programs
 - Confirm submittal compliance with ICC ES (Evaluation Services) reports
 - Evaluate and approve any Special Inspections/Inspectors
 - Review any manufacturer's material submitted

- **During Permitting:**
 - Hold a Pre-Construction Conference that includes jurisdictional staff, owner, General Contractor and the subs
 - Verify that correct number and types of inspections are performed
 - Verify that all the required approvals have been obtained
 - Set up procedure for how to handle the inevitable changes, etc. that occur during construction
 - Evaluate and accept any third party (LEED, IGCC, etc.) required documentation to be submitted to the jurisdiction

- **Post Permitting (Construction):**
 - Hold major system conferences (roofing, etc.) that includes jurisdictional staff, owner, architect, G.C. and the major subs
 - Perform the correct number and types of inspections
 - Maintain coordination/interaction between field personnel and office personnel of jurisdiction and the contractor.
 - Maintain the relationship between the jurisdiction and the owner/architect/contractor
 - Evaluate and accept any third party (LEED, IGCC, etc.) required documentation

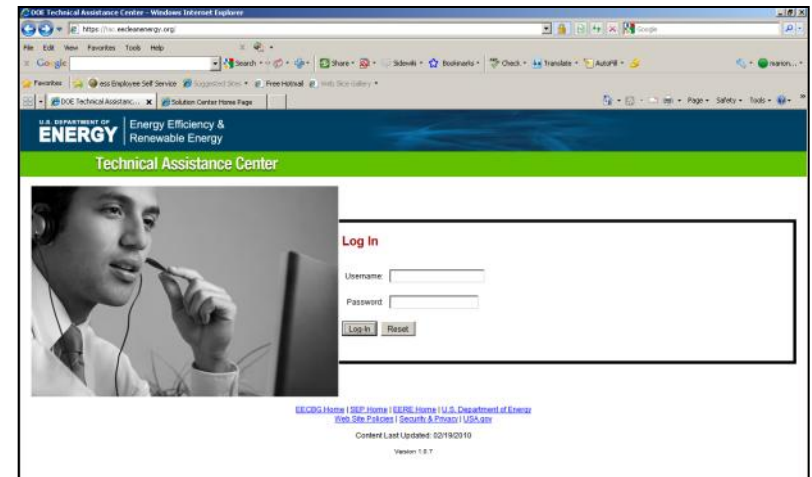
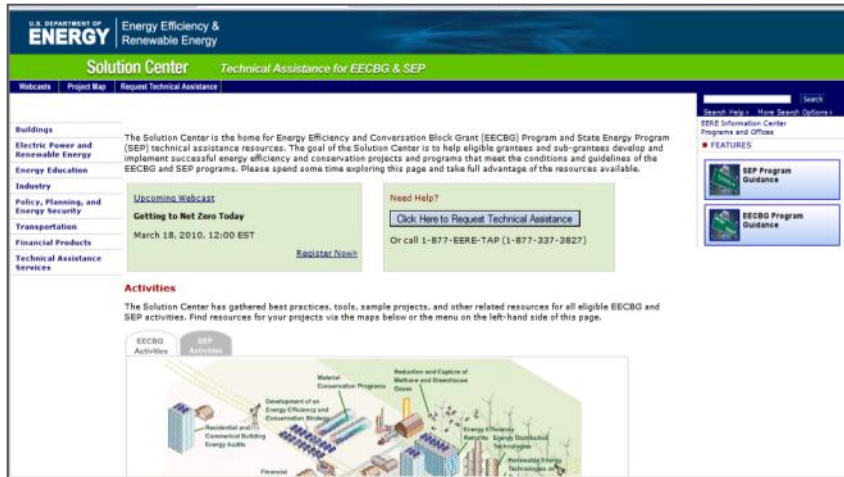
- **Post Permitting/Occupancy:**
 - Commissioning
 - This is to verify that the systems are installed and will operate as designed
 - Renovations/Remodels
 - Provide and maintain archived documents so they can serve as a baseline for proposed changes
 - Additional thoughts
 - Enforcement of energy efficiency and renewable energy needs to continue over a structure's life span

- Learning from Each Other – Network
- International Code Council, iccsafe.org
- ASHRAE, ashrae.org
- Regional Chapters ICC and ASHRAE
 - ashrae.org/members/page/607
 - iccsafe.org/gr/content/Pages/gr-map.aspx
- BCAP-OCEAN.org
- energycodes.gov (BECF website)
- codecollegenetwork.com (buildingmedia.com)

We encourage you to:

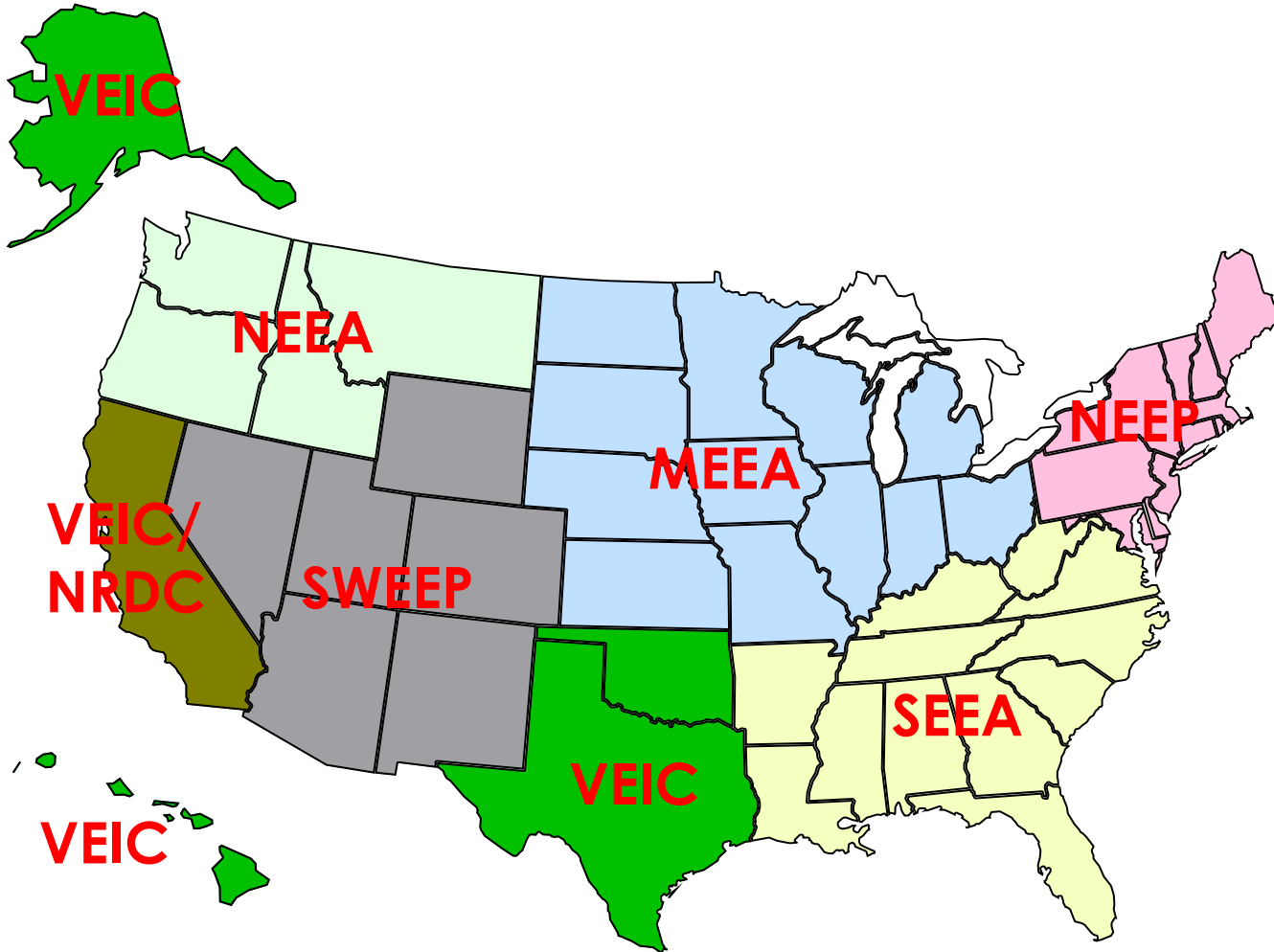
1) Explore our online resources via the [Solution Center](#)

2) Submit a request via the [Technical Assistance Center](#)



3) Ask questions via our call center at 1-877-337-3827 or email us at solutioncenter@ee.doe.gov

Who We Are: Team 4



ACEEE, NRDC: National Support

TEAM 4

VEIC: Dan Quinlan, dquinlan@veic.org, 802-488-7677 (**Team 4 Lead**)

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QUESTIONS?

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Please join us again:

Title: **Energy Management Systems: Maximizing Energy Savings**

Host: Sara Lisauskas, ICF International

Date: October 15, 2010

Time: 12:00-1:30 EST

Title: **Driving Demand #2: Lessons from the Field**

Host: Merrian Fuller, Lawrence Berkeley National Lab

Date: October 19, 2010

Time: 2:00-3:15 EDT

Title: **Overcoming Common Pitfalls: Energy Efficient Lighting Projects**

Host: Jeffrey Schwartz, ICF International and Heidi Steward, Pacific Northwest National Lab

Date: October 21, 2010

Time: 12:00-1:30 EDT

Title: **Tips and Tools for Promoting Your Energy-Efficiency Project**

Host: Nancy Raca, ICF International and Jim Arwood, NASEO

Date: October 22, 2010

Time: 12:00-1:00 EDT

Title: **Quality Assurance for Residential Retrofit Programs**

Host: David Keefe and Jim Grevatt, VEIC

Date: October 26, 2010

Time: 2:00-3:00 EDT

Title: **RETScreen Training 101**

Host: Sarah Busche and Jimmy Jones, NREL

Date: October 27, 2010

Time: 3:00-4:15 EDT

Title: **Benchmarking Your Building's Energy Using EPA's ENERGY STAR Portfolio Manager**

Host: Peter Flippen, ICF International

Date: October 28, 2010

Time: 12:00-1:00 EST

For the most up-to-date information and registration links, please visit the Solution Center webcast page at www.wip.energy.gov/solutioncenter/webcasts