



Home Performance Coalition

*Cost Effectiveness Testing (and How
Contractors Can Get Involved With Policy
Reforms in Energy Efficiency)*

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Introduction – Big Picture Overview

1. Home Performance Contractors Have a Great Story to Tell (6 Slides)
2. A New National Standard Practice Manual Will Help Lead to Reforms in the States (13 Slides)
3. Home Performance Contractors Are *Potentially* - Energy Efficiency's Best Advocates (3 Slides)

The Energy Efficiency and Jobs Story – Report I

On December 8, 2016, Environmental Entrepreneurs (E2), a national non-partisan business group, and E4TheFuture, an energy efficiency advocacy group released [**Energy Efficiency Jobs in America**](#) (the EE Jobs Report).

The EE Report concluded that energy efficiency is one of the nation's biggest job sectors, employing more than **1.9 million Americans across all 50 states.**

The Energy Efficiency and Jobs Story – Report I

- The **EE Jobs Report** found that energy efficiency is by far the nation's **largest clean energy sector employer**, outpacing the renewable energy, clean vehicles and clean fuels sectors.
- With 1.9 million workers, more Americans are employed in energy efficiency businesses than major sectors like real estate or food manufacturing.
- Many more Americans work in energy efficiency than in oil and gas extraction (195,000 workers) or coal mining (66,000 workers).

The Energy Efficiency and Jobs Story – Report II

On January 13, 2017, the U.S. Department of Energy released its [**2017 U.S. Energy and Employment Report \(USEER\)**](#). The 2017 USEER documented that **2.2 million Americans are employed**, in whole or in part, in the design, installation, and manufacture of energy efficiency products and services, adding 133,000 jobs in 2016 alone.

The Energy Efficiency and Jobs Story – Report II

- Almost 1.4 million Energy Efficiency jobs are in the construction industry.
- USEER identified almost 290,000 manufacturing jobs, producing Energy Star[®] certified products and energy efficient building materials in the U.S.
- **Energy Efficiency is the largest clean energy sector employer in the U.S.**

The Energy Efficiency and Jobs Story - CA

California is home to about 321,000 energy efficiency related jobs - more than any other state.

Almost three in ten energy efficiency workers are primarily devoted to supporting traditional HVAC technologies, but most of the remainder of the sector is spread across efficient lighting, energy star appliances, high efficiency HVAC, and advanced materials and insulation.

The Energy Efficiency and Jobs Story - CA

- The state's energy efficiency economy is comprised largely of installation and trade firms, with these
- two value chain activities accounting for 57 percent of establishments. There is also significant
- representation across professional service and manufacturing firms. Most of these are small
- **businesses—almost seven in ten report 10 or fewer employees.**

Current Cost Effectiveness Testing

Usually one or more of the five tests from the California Standard Practice Manual (1983)

- Utility Cost Test (UCT)
- Societal Cost Test (SCT)
- Total Resource Cost Test (TRC)
- Participant Cost Test
- Ratepayer Impact Measure Test (RIM)
- *Only applied to energy efficiency and (sometimes) other demand-side programs*

New Policy Initiative

National Standard Practice Manual

- **Traditional tests (UCT, TRC test, SCT)**
 - Have no underlying principles
 - Don't directly address policy goals/needs
 - Lack of clarity on their conceptual constructs
 - Many states have modified the traditional tests

Why a New Cost-Effectiveness Manual?

- **Efficiency is not accurately valued in many jurisdictions**
 - Current test do not account for all impacts relevant to applicable policy objectives
 - Asymmetrical application of costs and benefits (especially for participant impacts)
 - ***Do not capture comfort, health, job creation and other “non-energy benefits”***
- **Lack of transparency on why/how tests were chosen/developed**

Example: What's Missing from a Standard Total Resource Cost Test?

Non-energy benefits

- Comfort
- Health
- Safety
- Noise attenuation
- *Many more...*

Public policy benefits

- Other fuel savings
- Water savings
- Reduced risk / increased reliability
- Carbon and pollutant reduction
- Economic development
- *Many more...*

Purpose of National Standard Practice Manual

- Set forth policy neutral principles for test development & application
- Establish framework for primary test selection/development
- Provide guidance on key test inputs/application issues
- Allows States and State PUCs to “test their tests.”

NSPM provides a foundation on which jurisdictions can develop and administer a cost-effectiveness test, but does not prescribe “the answer.”

National Standard Practice Manual Principles

1. Recognize that energy efficiency is a resource.
2. Account for applicable policy goals.
3. Account for all relevant costs & benefits, even if hard to quantify impacts.
4. Ensure symmetry across all relevant costs and benefits.
5. Conduct a forward-looking, long-term analysis that captures incremental impacts of energy efficiency.
6. Ensure transparency in presenting the analysis and the results.

Implementing the Resource Value Framework Involves Seven Steps

Step 1	Identify and articulate the jurisdiction's applicable policy goals.
Step 2	Include all utility system costs and benefits.
Step 3	Decide which additional <i>non-utility</i> system costs and benefits to include in the test, based on applicable policy goals.
Step 4	Ensure the test is symmetrical in considering both costs and benefits.
Step 5	Ensure the analysis is forward-looking, incremental, and long-term.
Step 6	Develop methodologies and inputs to account for all impacts, including hard-to-quantify impacts.
Step 7	Ensure transparency in presenting the analysis and the results.

STEP 1

Identify and Articulate Applicable Policy Goals

Policy Goals Reflected in Laws, Regulations, Orders, etc.

Laws, Regulations, Orders:	Low-Cost	Fuel Diversity	Risk	Reliability	Environmental	Economic Development
PSC statutory authority	X			X		
Low-income protection						X
EE or DER law or rules	X	X	X	X	X	X
State energy plan	X	X	X	X	X	X
Integrated resource planning		X	X		X	X
Renewable portfolio standard		X	X		X	X
Environmental requirements					X	

- Each jurisdiction has a constellation of energy policy goals embedded in statutes, regulations, orders, guidelines, etc.
- This table illustrates how those laws, regulations, orders, etc. might establish applicable policy goals.

STEP 2

Include All Utility System Costs and Benefits in the Test

Illustrative Utility System Costs	Illustrative Utility System Benefits
<ul style="list-style-type: none"> • EE Measure Costs (utility portion – e.g. rebates) 	<ul style="list-style-type: none"> • Avoided Energy Costs
<ul style="list-style-type: none"> • EE Program Technical Support 	<ul style="list-style-type: none"> • Avoided Generating Capacity Costs
<ul style="list-style-type: none"> • EE Program Marketing/Outreach 	<ul style="list-style-type: none"> • Avoided T&D Upgrade Costs
<ul style="list-style-type: none"> • EE Program Administration 	<ul style="list-style-type: none"> • Avoided T&D Line Losses
<ul style="list-style-type: none"> • EE Program EM&V 	<ul style="list-style-type: none"> • Avoided Ancillary Services
<ul style="list-style-type: none"> • Utility Shareholder Performance Incentives 	<ul style="list-style-type: none"> • Wholesale Price Suppression Effects
	<ul style="list-style-type: none"> • Avoided Costs of RPS Compliance
	<ul style="list-style-type: none"> • Avoided Costs of Environmental Compliance
<p><i>The principle of treating energy efficiency as a avoided credit and collection costs costs and benefits serve as the foundation for all tests</i></p>	<ul style="list-style-type: none"> • Avoided Credit and Collection Costs
	<ul style="list-style-type: none"> • Reduced Risk
	<ul style="list-style-type: none"> • Increased Reliability

STEP 3

Include Non-Utility System Impacts Based on Jurisdiction's Applicable Policy Goals

Applicable policy goals include all policy goals adopted by a jurisdiction that could have relevance to the choice of which energy resources to acquire. Examples include:

Common
Overarching
Goals:

Provide safe, reliable, low-cost electricity and gas services; protect low-income and vulnerable customers; maintain or improve customer equity.

Efficiency
Resource
Goals:

Reduce electricity and gas system costs; develop least-cost energy resources; promote customer equity; improve system reliability and resiliency; reduce system risk; promote resource diversity; increase energy independence (and reduce dollar drain from the jurisdiction); reduce price volatility.

Other
Applicable
Goals:

Support fair and equitable economic returns for utilities; provide reasonable energy costs for consumers; ensure stable energy markets; reduce energy burden on low-income customers; reduce environmental impact of energy consumption; promote jobs and local economic development; improve health associated with reduced air emissions and better indoor air quality.

These goals are established in many ways:

- Statutes
- Regulations
- Commission Orders
- EE Guidelines
- EE Standards
- Directives
- And Others

STEP 3

Illustrative Non-Utility System Impacts

Impact	Description
Participant impacts	Impacts on program participants, includes participant portion of measure cost, other fuel savings, water savings, and participant non-energy costs and benefits
Impacts on low-income customers	Impacts on low-income program participants that are different from or incremental to non-low-income participant impacts. Includes reduced foreclosures, reduced mobility, and poverty alleviation
Other fuel impacts	Impacts on fuels that are not provided by the funding utility, for example, electricity (for a gas utility), gas (for an electric utility), oil, propane, and wood
Water impacts	Impacts on water consumption and related wastewater treatment
Environmental impacts	Impacts associated with CO2 emissions, criteria pollutant emissions, land use, etc. Includes only those impacts that are not included in the utility cost of compliance with environmental regulations
Public health impacts	Impacts on public health; includes health impacts that are not included in participant impacts or environmental impacts, and includes benefits in terms of reduced healthcare costs
Economic development and jobs	Impacts on economic development and jobs
Energy security	Reduced reliance on fuel imports from outside the jurisdiction, state, region, or country

This table is presented for illustrative purposes, and is not meant to be an exhaustive list.

STEP 7

Ensure Transparency in Decisions on Which Non-Utility System Impacts To Include

- Process should be open to all stakeholders.
- Stakeholder input can be achieved through a variety of means:
 - rulemaking process,
 - generic jurisdiction-wide docket,
 - working groups or technical sessions,
- Address objectives based on current jurisdiction policies
 - However, be flexible to incorporate evolution of policies through time.
- Policy goals may require consultation with other government agencies
 - Environmental protection
 - Health and human services
 - Economic development

NESP Members

Sign up at <http://nationalefficiencyscreening.org>

The Alliance to Save Energy, ACEEE, Arkansas Advanced Energy Economy, Association for Energy Affordability, Bki, Building Performance Contractors Association, BPI, Conservation Connection Consulting, Democracy and Regulation, Earth Advantage, E4TheFuture, Efficiency First, Efficiency Vermont, Elevate Energy, Energy Federation Inc., Environment America, Environment Northeast, Habitat for Humanity, Home Performance Guild of Oregon, Local Energy Alliance Program, MaGrann Associates, National Center for Healthy Housing, National Grid, Home Performance Coalition, National Housing Trust, NRDC, Northeast Energy Efficiency Council, PECEI, Performance Systems Development, Retrofit Software, Sealed, Sierra Club, Southeast Energy Efficiency Alliance, Southern Environmental Law Center, Southwest Energy Efficiency Program, Truveon Corporation, Wisconsin Energy Center

Energy Efficiency Advocacy

Know Who Your Representatives Are:

- City Council, State Assembly, State Senate

Get to Know Your Representatives

- Best Time to Meet them is When You Don't Need Anything

Show up for Hearings or Workshops

Case Study – Portland City Council

Oregon Home Performance Guild – 50 to 100 Members

Home Energy Score Ordinance – November 2017

Two City Council Hearings on the Ordinance (September and October 2017)

Briefings, Talking Points, T-Shirts

Home Energy Score Ordinance –Passed
Implementation Begins January 1, 2018

Case Study – Maryland Legislature

EmPOWER Energy Efficiency Program

Expiration July, 2016

House & Senate Bills Passed Feb. – March 2017

“Education Day” – Annapolis: March 29, 2017

- 28 Home Energy Performance Contractors
- 40 Legislative Visits
- Governor Did Not Veto EmPOWER
Legislation – Programs Implemented in 2017