Energy Efficiency Market Transformation Opportunities for Texas

September 13, 2007

Utility DSM Programs and Federal Tax Incentives for Energy Efficiency in Buildings

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Harry's role at Owens Corning is to develop and deploy strategies to increase the level of energy efficient new residential and commercial construction nationally and regionally through adoption and enforcement of building energy codes, promotion of Federal energy efficiency tax incentives and electric and natural gas utility efficiency programs. Prior to joining Owens Corning, Harry was Director of Buildings and Utility Programs at the Alliance to Save Energy in Washington, DC, one of the leading energy efficiency advocacy organizations in the US. Harry led the Alliance's efforts in the areas of building energy codes, appliance and equipment standards, efficient windows and utility demand-side management programs. Harry also led the Alliance's efforts to promote public participation in the Federal energy efficiency tax incentives program and chaired the Commercial Subcommittee of the Tax Incentives Assistance Project (TIAP.)
He serves as a member of the ASHRAE Standard 90.1 Committee, and the ASHRAE special project committee that produces the Advanced Energy Design Guides. He chaired the Responsible Energy Codes Alliance (RECA) and is active in the International Code Council. Harry has served on the Boards of Directors of the Midwest Energy Efficiency Alliance, the National Fenestration Rating Council (NFRC) and the Association of Energy Services Professionals International. He has been in the energy efficiency business for more 30 years as a consulting firm executive and as an energy efficiency advocate, with international consulting experience including engagements in the Peoples' Republic of China, Hungary and Poland, and assisting USAID to establish energy conservation programs in Indonesia, Thailand, Malaysia, Singapore, and Egypt.

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NAIMA
NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION

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Today's Agenda

- Background on Federal Tax Incentives for Energy Efficiency in Buildings
- Benefits of Aligning New Construction DSM Programs with Federal Tax Incentives
- Impact Estimates of Federal Tax Incentive Efficiency Levels in Texas
- Program Design Possibilities
- Recommendations

NAIMA
North American Insulation Manufacturers Association

North American Insulation Manufacturers Association

- **NAIMA is the trade association for North American manufacturers of fiber glass, rock wool, and slag wool insulation products.**

- **NAIMA's role is to promote energy efficiency and environmental preservation through the use of fiber glass, rock wool, and slag wool insulation.**

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Summary of Tax Credits for New Residential Construction

- **Builder tax credit of $2,000 for home that uses 50% less heating and cooling energy than 2004 Supplement IECC model residential code.**
  - Heating and cooling equipment efficiencies which are at least equal to the minimum allowed under NAECA, and
  - Building envelope component improvements account for at least one-fifth (1⁄5) of such 50 percent.
- **Available until December 31, 2008**
- **Applies to "dwelling units". Multifamily buildings 3 stories or less can claim credit for each unit. Each unit must be certified.**
- **Requires RESNET procedures to show compliance. Use RESNET publication No. 05-001**
- **Builders obtain certification from eligible certifier**

Summary of Tax Incentives for Commercial Buildings

- **Deduction up to $1.80/square foot of building space for owners or lessees of any US building within scope of ASHRAE Standard 90.1-2001**
- **For buildings designed to perform at 50% less energy costs than required by ASHRAE Standard 90.1-2001 (as in effect on April 2, 2003, including addenda adopted through that date—specifically excludes the Lighting Power Density changes.)**
- **Partial deduction (up to $0.60/sq.ft.) for building envelope, HVAC and hot water, or lighting systems by reducing energy costs by 16.66%**
- **Procedures for compliance, modeling and inspections published by IRS, DOE and NREL.**
- **For government buildings, deduction can go to designer, but rules not yet published**
- **Available until December 31, 2008**

Five Ways to Claim the Commercial Tax Deductions

1. **Whole building 50% energy cost reduction**
2. **Partial Deduction – Lighting Target**
3. **Partial Deduction – HVAC Target**
4. **Partial Deduction – Envelope Target**
5. **Interim Lighting Rules* using ASHRAE prescriptive lighting tables (9.3.1.1 and 9.3.1.2)**

***Interim Lighting Rules only in effect until final regulations are published in Federal Register**

Benefits of Aligning New Construction DSM Programs with Federal Tax Incentives

- **High impact energy savings.** Can contribute towards meeting higher Texas utility energy savings goals in HB 3693
- **Energy savings are reliable**. IRS and DOE rules for claiming the tax incentives are rigorous; technologies provide permanent load reductions
- **No free riders**. The Federal tax incentive energy efficiency levels are challenging to meet, but demonstratively achievable
- **Leveraged incentive payments from the US Treasury.** Can boost program participation rates with Treasury funds
- **Program administration burdens are reduced**. IRS documentation that supports valid tax incentive claims can be accepted at face value by utilities for incentive payment purposes.

Legislative Prospects for Extension by Congress are Good! May be Extended to 2013.

Tax Credit Energy Savings Impacts are Significant in Texas

- Energy impact analysis done for 8 Texas locations: Abilene, Amarillo, Brownsville, Corpus Christi, Dallas, El Paso, Houston, and Lubbock
- Typical single story residence of 1800 sq.ft. with gas furnace and split system AC
- Tax credit efficiency “50%” levels can be met in all locations (except Amarillo at 44%) with conventional technologies:
  - Furnace AFUE 95-97; AC SEER 16-17
  - Windows 0.35 U-factor and 0.25 SHGC
  - Insulation: R-49/50/55 ceiling; R-19/21 walls + sheathing; R-10 slab
- Energy impacts:
  - Heating and cooling energy cost/use reductions of 50%
  - AC unit downsizing of **0.50 to 1.0 tons**
  - Peak load reductions of **0.86 to 1.36 kW**

Reductions in AC Unit Sizing

	Air Conditioning Sizing to Meet Cooling Load (ton)		
	Code	**Tax Credit**	**Reduction**
Abilene	2.50	2.00	0.50
Amarillo	2.50	2.00	0.50
Brownsville	3.00	2.00	1.00
Corpus Christi	3.00	2.00	1.00
Dallas	3.00	2.00	1.00
El Paso	2.50	2.00	0.50
Houston	3.00	2.00	1.00
Lubbock	2.50	1.50	1.00

Reductions in Peak kW

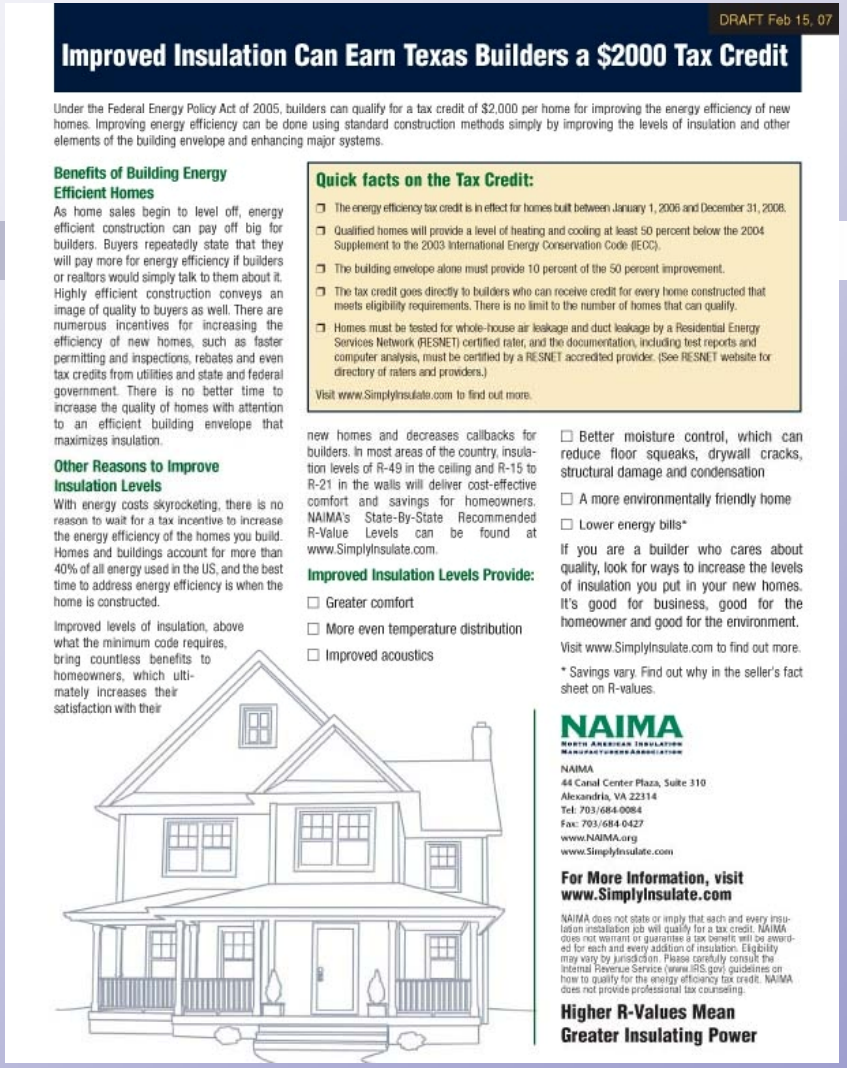
	Code Peak kW	Tax Credit Peak kW	Peak kW Reduction per Home
Abilene	3.45	2.31	1.14
Amarillo	2.90	2.02	0.88
Brownsville	3.55	2.26	1.29
Corpus Christi	3.81	2.45	1.36
Dallas	3.71	2.45	1.26
El Paso	3.20	2.22	0.98
Houston	3.49	2.36	1.13
Lubbock	2.93	2.07	0.86

Program Design Possibilities

- Residential builder tax credit program can be a “Tier 2” add-on to Energy Star
  - IRS documentation for qualifying homes can be accepted to approve incentives
  - Incentives can be valued on energy savings and kW reduction
  - Program marketing can involve trade allies
- Commercial tax deduction program can be flexible:
  - New commercial construction program
  - HVAC, envelope and lighting retrofits in existing buildings
  - IRS documentation can be used to approve incentives
  - Residential trade allies also work in small commercial market

Enlist Trade Ally Support!

- Texas Association of Builders
  - Energy Code Seminars at Local Associations in 2008
- Building Products Industry
  - Insulation, Windows and HVAC
- Allies can partner with Texas utilities to deliver savings



DRAFT Feb 15, 07

Improved Insulation Can Earn Texas Builders a $2000 Tax Credit

Under the Federal Energy Policy Act of 2005, builders can qualify for a tax credit of $2,000 per home for improving the energy efficiency of new homes. Improving energy efficiency can be done using standard construction methods simply by improving the levels of insulation and other elements of the building envelope and enhancing major systems.

Benefits of Building Energy Efficient Homes

As home sales begin to level off, energy efficient construction can pay off big for builders. Buyers repeatedly state that they will pay more for energy efficiency if builders or realtors would simply talk to them about it. Highly efficient construction conveys an image of quality to buyers as well. There are numerous incentives for increasing the efficiency of new homes, such as faster permitting and inspections, rebates and even tax credits from utilities and state and federal government. There is no better time to increase the quality of homes with attention to an efficient building envelope that maximizes insulation.

Other Reasons to Improve Insulation Levels

With energy costs skyrocketing, there is no reason to wait for a tax incentive to increase the energy efficiency of the homes you build. Homes and buildings account for more than 40% of all energy used in the US, and the best time to address energy efficiency is when the home is constructed.

Improved levels of insulation, above what the minimum code requires, bring countless benefits to homeowners, which ultimately increases their satisfaction with their new homes and decreases callbacks for builders. In most areas of the country, insulation levels of R-49 in the ceiling and R-15 to R-21 in the walls will deliver cost-effective comfort and savings for homeowners. NAIMA's State-By-State Recommended R-Value Levels can be found at www.SimplyInsulate.com.

Quick facts on the Tax Credit:

- The energy efficiency tax credit is in effect for homes built between January 1, 2006 and December 31, 2008.
- Qualified homes will provide a level of heating and cooling at least 50 percent below the 2004 Supplement to the 2003 International Energy Conservation Code (IECC).
- The building envelope alone must provide 10 percent of the 50 percent improvement.
- The tax credit goes directly to builders who can receive credit for every home constructed that meets eligibility requirements. There is no limit to the number of homes that can qualify.
- Homes must be tested for whole-house air leakage and duct leakage by a Residential Energy Services Network (RESNET) certified rater, and the documentation, including test reports and computer analysis, must be certified by a RESNET accredited provider. (See RESNET website for directory of raters and providers.)

Visit www.SimplyInsulate.com to find out more.

Improved Insulation Levels Provide:

- ☐ Greater comfort
- ☐ More even temperature distribution
- ☐ Improved acoustics
- ☐ Better moisture control, which can reduce floor squeaks, drywall cracks, structural damage and condensation
- ☐ A more environmentally friendly home
- ☐ Lower energy bills*

If you are a builder who cares about quality, look for ways to increase the levels of insulation you put in your new homes. It's good for business, good for the homeowner and good for the environment.

Visit www.SimplyInsulate.com to find out more.

* Savings vary. Find out why in the seller's fact sheet on R-values.

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NAIMA does not state or imply that each and every insulation installation job will qualify for a tax credit. NAIMA does not warrant or guarantee a tax benefit will be awarded for each and every addition of insulation. Eligibility may vary by jurisdiction. Please carefully consult the Internal Revenue Service (www.IRS.gov) guidelines on how to qualify for the energy efficiency tax credit. NAIMA does not provide professional tax counseling.

Higher R-Values Mean Greater Insulating Power

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Q&A and Discussion

Thank You

For Your

Attention!